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Social Influence on Lifestyle Behaviors and High Blood Pressure
in Black African American Adults

by

Herbert Pierrie

DISSERTATION

DOCTOR OF PHILOSOPHY

in

Nursing

in the

GRADUATE DIVISION

of the

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

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By

Herbert Pierrie

*This research study is dedicated to the subjects who most willingly gave
their input to promote Health in
the Black Community*

*To my parents, James and Ethel Pierrie,
who always lead by example and
taught me that I could achieve
great things*

*And to Dr Erika Froelicher
whose wisdom, guidance, support, and encouragement
enabled me to make it through
this arduous endeavor*

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Social Influence on Lifestyle Behaviors and High Blood Pressure

In Black African American Adults

Herbert Pierrie, RN, MSN

University of California San Francisco, 2011

ABSTRACT

Purpose: To examine the relationship between BP and BP awareness; eating habits and exercise self-confidence; lifestyle behaviors; social capital; chronic disease management self-confidence, social support; depression; and antihypertensive medication adherence in Black African American adults.

Significance: High blood pressure (HBP) is the leading cause of cardiovascular disease such as stroke, coronary heart disease, and end-stage renal disease; all are leading causes of death in the US. HBP has been attributed to higher rates of morbidity, comorbidities, and excess death rates in Black Americans of African descent. Little is known about the extent to which lifestyle behaviors and HBP are modified by the socioecological context of social capital (SC) (e.g. bonding, bridging, and linking).

Design: Cross-sectional descriptive study.

Methods: A convenience sample (n=208) was recruited from community settings in California. Inclusion criteria were: self-identify as Black African American, ≥ 18 years old, born/raised in US, reads and/or speaks English, resident of California, no major cardiovascular event or currently on dialysis, and non-pregnant women. The data collection instrument consisted of 161 questions. Subjects' BP and body weight were also measured.

Findings: Subjects diagnosed with HBP prior to the study had higher self-confidence in *getting information from community resources* and in *managing chronic disease* compared to subjects without a prior HBP diagnosis ($p=0.01$). Predictors of measured HBP included: education (OR=0.1; 95% CI 0.0, 0.8); income (OR=0.1, 95% CI 0.1, 0.9); age-income interaction (OR=5.9, 95% CI 1.3, 26.5); age-education interaction (OR=11.1, 95% CI 2.0, 60.7); and bonding SC (OR=2.3, 95% CI 1.1, 5.0) for subjects < 60 years old. Predictors of measured

HBP for subjects ≥ 60 years old included: bonding SC (OR=0.3, 95% CI 1.1, 15.4); bridging SC (OR=0.5, 95% CI 0.3, 0.9); and linking SC (OR=0.3, 95% CI 0.1, 0.9).

Conclusions: Subjects with normal BP were less confident in their ability to obtain information and manage chronic illness compared to subjects with HBP who were taking antihypertensive medication prior to the study. Results were mixed with regard to SC and BP elevation; as bonding SC increased in subjects < 60 years old their measured BP levels also increased. In subjects ≥ 60 years old, the results were reversed; as bonding, bridging, and linking SC increased their BP levels decreased as expected. Multiple logistic regression analysis indicated bonding SC as the only predictor of HBP in subjects < 60 years old.

Implications: This study shows a need for further development of the SC concept as a methodological framework in nursing research and the need for further empirical investigation of SC as a predictor of physiological outcome measures such as HBP.



APPROVED BY DISSERTATION CHAIR:
Erika S. Froelicher, RN, PhD, FAAN

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Chapter 1

Introduction

Introduction

Blood pressure is defined as the tension or force that is exerted by blood against the walls of the arteries (Venes, 1997). Hypertension is the medical term for high blood pressure (HBP). It is characterized by an elevation in the resting blood pressure (BP) that is required to maintain adequate tissue perfusion when there is constricted or impaired arterial circulation (Kannel, 2002; Morganti, 2002). High BP in adults is based on a systolic blood pressure (SBP) ≥ 140 mmHg and/or a diastolic blood pressure (DBP) ≥ 90 mmHg (Joint National Committee Seventh Report [JNC-7], 2004). It is representative of the excessive force that blood exerts against arterial blood vessels above established normal limits (Beare & Myers, 1994). The force generated by the heart during contractions is the systolic blood pressure, and the force exerted against the walls of the arteries when the heart relaxes is the diastolic blood pressure (American Medical Association [AMA], 1998).

High BP has become a global pandemic, and it is the most common primary diagnosis in the US each year (Cherry & Woodwell, 2002). The 35 million annual visits to physicians' offices also make it the number one reason for physician office visits (Cherry & Woodwell, 2002; Hodgson & Cai, 2001). Pharmacologic interventions used to control BP account for the greatest use of prescription drugs (Eaton, Buck, & Catanzaro, 1996). The considerable economic burden on society caused by cardiovascular disease (CVD) is directly reflected in healthcare cost (Francischetti & Genelhu, 2006). In 2007, "the direct and indirect cost associated with HBP was \$43.5 billion" (Roger et al., 2011, p, 104).

Hypertension disproportionately affects different socioeconomic and racial/ethnic groups. The excess death rate among Black African Americans in the US each year is largely attributed to hypertension-related CVD. Black Americans of African descent represent 25% of the nearly 60 million cases of hypertension in the US; although they constitute only 13% of the total population (Hajjar & Kotchen, 2003; Martins & Norris, 2004).

This study is targeted to identify certain risk factors that may influence BP levels and effective HBP control in Black African American adults. High BP is a chronic vascular disease and primary risk factor for other chronic diseases that may affect organs such as the heart, brain, and kidneys and subsequently result in death. Hypertension prevalence rates are highest in Black Americans of African descent. It is also a major contributor to the excess death rate of Blacks in the US compared to other racial/ethnic groups.

High BP is influenced by multiple risk factors and by multiple interactions between various risk factors. These multiple interactions suggest various causal pathways exist between risk factors and HBP that present major challenges to understanding HBP and the disparate prevalence rates of HBP between populations and subgroups. Risk factor management has been identified as a major strategy for preventing and controlling HBP (Nanchahal, Ashton, & Wood, 2000). Examining the relationships between HBP and selected risk factors in this study will enhance understanding of the risk factors associated with HBP in Black African American adults, identify risk factors that may be targeted for intervention development, and subsequently reduce the disparately high prevalence rates of HBP in this ethnic group.

Multiple risk factors have been attributed to higher BP levels in Black Americans of African descent. These risk factors include socioeconomic status (SES) and low BP awareness with regard to personal BP values and the association between uncontrolled HBP and the increased risk for illnesses such as heart attack, stroke, and end-stage renal disease (Pressure Points, 2009). Lifestyle behaviors such as a high consumption of salt and fats, tobacco use, and low physical activity also have been identified as major risk factors in this ethnic group (JNC-7, 2004). Less is known, however, with regard to HBP and risk factors such as depression; social influences such as social support and social networks; and confidence in ones capability to adopt healthy behaviors related to eating habits and exercise, chronic disease self-management, and antihypertensive medication adherence.

This study examines the frequency of HBP and the association between non-modifiable risk factors, modifiable risk factors, and BP levels in Black African American adults. The non-modifiable risk factors include age, gender, and ethnicity. Modifiable risk factors include lifestyle behaviors that are related to eating and exercise practices, stress management, and use of tobacco products; social risk factors such as SES, social support, and a concept new to nursing, SC. It also includes personal risk factors that are amenable to modification such as BP awareness; depression; eating habits and exercise self-confidence; chronic disease management self-confidence; and antihypertensive medication adherence self-efficacy.

Aim of the Study

The aim of this study is to assess the various dimensions of SC (social trust, inter-racial trust, trust in government, political participation, civic participation, informal social

ties, informal social ties and engagement, giving/volunteering, and faith-based engagement); BP awareness of; eating habits and exercise self-confidence; lifestyle behaviors; SC; chronic disease management self-confidence; social support; depression; antihypertensive medication adherence self-efficacy and effective BP control in a sample of Black African American adults who live in California. The research questions that were developed for this study are presented next: **RQ1**. What is the frequency of HBP in Black African American adults? **RQ2**. Is there a relationship between BP awareness and BP in Black African American adults? **RQ3**. Is there a relationship between eating habits and exercise self-confidence and BP in Black African American adults? **RQ4**. Is there a relationship between lifestyle behavior and BP in Black African American adults? **RQ5**. Is there a relationship between the dimensions of SC and BP in Black African American adults? **RQ6**. Is there a relationship between social support and BP in Black African American adults? **RQ7**. Is there a relationship between chronic disease management self-confidence and BP in Black African American adults? **RQ8**. Is there a relationship between depression and BP in Black African American adults? **RQ9**. Is there a relationship between antihypertensive medication adherence self-efficacy and BP in Black African American adults? **RQ10**. Is there a statistically significant relationship between the independent predictor variables in **RQ1** through **RQ9** and BP in Black African American adults? The hypothesis for this study is there is a statistically significant relationship between SC and BP in Black African American adults.

Purpose of Chapters

Chapter 2 reviews the literature and describes the epidemiology of HBP and health disparities associated with HBP in Black African American adults in comparison to their White counterparts. The epidemiology of HBP in Chapter 2 includes a discussion of biological risk factors (age, gender, ethnicity), risk factors of the social environment (SES, social support, and SC), and personal/behavioral risk factors that include BP awareness, eating habits and exercise self-confidence, chronic disease management self-confidence, antihypertensive medication adherence self-efficacy, and depression. Chapter 3 describes SC theory which was used as the conceptual framework to examine the relationship between SC and BP. Chapter 4 describes the methods used in this cross-sectional study. Chapter 5 presents the results of the study. Chapter 6 presents a discussion of the findings and implications for practice and further research.

Chapter 2
Review of the Literature

Introduction

The purpose of this chapter is to discuss the definition, classification, and epidemiology of HBP. High BP disproportionately affects Black Americans of African descent compared to other ethnic groups. It is the major underlying cause of target organ damage and cardiovascular-related deaths in this population (Dressler, 1996). The importance of BP measurement; awareness, treatment, and control are also presented in this chapter. A discussion of the risk factors selected as covariates for this study and their relationship to BP are presented at the end of this review of the literature.

Definition of High Blood Pressure

High BP is a complex disorder involving mechanisms that influence cardiac output, vascular resistance, and blood volume (Cunningham, 2000). High BP is characterized by sustained elevations in BP \geq 140/90 mmHg. The terms hypertension and HBP are used interchangeably in the report of this research study.

The physiology of BP and the pathophysiology of HBP are complex, and they are associated with various mechanisms of the cardiovascular, endocrine, and renal systems. Because the focus of this research study examines social and behavioral risk factors as they relate to BP at the individual level, a brief report of the physiology of BP and pathophysiology of HBP are discussed in this review. The physiology of BP is specific to arterial blood flow. The force generated by the heart during contractions is called the systolic blood pressure (SBP), and the force that is exerted against the walls of the arteries when the heart relaxes is the diastolic blood pressure (DBP) (AMA, 1998). Various physiological mechanisms known to regulate BP include: the renin-angiotensin system; BP regulation in obesity-related hypertension influenced by adiponectin;

intracellular pH and cell volume that alters contractile states of main blood vessels; and vasopressin regulation that normalizes BP during episodes of acute hypotension) (JNC-7, 2004). The pathophysiology of HBP is characterized by elevations in resting BP required in order to maintain adequate tissue perfusion when arterial circulation is constricted or impaired (Kannel, 2002; Morganti, 2002). High BP represents the excessive force that blood exerts against arterial blood vessels above established normal limits (Beare & Myers, 1994). High BP poses a high risk for damage to organs such as the heart, brain, and kidneys in addition to the eyes and blood vessels.

Essential hypertension (also known as primary hypertension) is the most frequently diagnosed form of HBP. Approximately 95% of all diagnosed cases of hypertension are essential hypertension, and 5% of the cases are categorized as secondary hypertension (Vagaonescu & Phillips, 2002). The exact etiology of essential hypertension is unknown (Ferrari, 2002). Secondary hypertension, however, involves elevations in BP that are a sequelae or secondary to other pathophysiologic conditions such as chronic and acute renal diseases; hyperparathyroidism; pheochromocytoma (e.g. a neuroendocrine tumor of the sympathetic nervous system that release catecholamines); and aldosteronism, a syndrome that results from excretion of too much potassium and the retention of too much sodium by the kidneys (Gregory, Bakir, & Oparil, 2002; Venes, 2001). Medications such as appetite suppressants, birth control pills, cold medications, corticosteroids, and medications used to control migraine headaches also have been associated with secondary HBP (National Institutes of Health [NIH], 2010).

Essential hypertension is the most common type of HBP and the type of HBP for which no identifiable cause has been found. Essential HBP is also referred to as the

‘silent killer’ because typically no symptoms are present. Because few symptoms are associated with HBP, people often are unaware of having this disease (Campbell-Scherer & Green, 2005; Moore, 2005). In the more severe cases the symptoms that occur may include tinnitus, lightheadedness, suboccipital headaches, epistaxis and easy fatigability (Anderson, 1994). Sustained hypertension may cause heart palpitations as arterial walls of the blood vessels thicken, become inelastic and resistant to blood flow causing left ventricular distention and hypertrophy that restricts the blood circulation of the heart (Anderson).

The onset of essential hypertension may occur in early childhood, during adolescence, or in adulthood (King, Meadows, Engelke, & Swanson, 2006). Recent estimates show that over 76 million adults in the US have HBP (Roger et al., 2011). These estimates are based on BP measurements $\geq 140/90$ mmHg, individuals currently taking antihypertensive medication, or by individuals being told by a health professional on more than one occasion that they have HBP.

Classification of HBP

Classification and the cutpoints for HBP in the US are established by the Joint National Committee (JNC) on the Prevention, Detection, Evaluation, and Treatment of High Blood Pressure Program (JNC-7, 2004). In addition to the JNC using evidence-based research and medical consensus to establish and revise BP classifications and cutpoints, they also establish clinical practice guidelines for treatment. Between 1976 and 2010, a downward trend in BP cutpoint values that indicate whether or not an individual has HBP has been observed. In 1976, the JNC classification system did not include SBP. Only DBP was included in the classification system at that time.

When this research study began, the JNC classification of BP was ranked into four separate groups (JNC-7, 2004). Normal BP has two levels and two stages of hypertension based on SBP and DBP ranges. Hypertension in adults (≥ 18 years) included a SBP equal to or greater than 140 mmHg and/or a DBP that is equal to or greater than 90 mmHg (JNC-7). See Table 2.1. These BP classifications were established in 2004 and were based on the average (mean) of two or more BP readings while seated for at least 5 minutes on two or more separate occasions (Hajjar & Kotchen, 2003). The new JNC-8 classification of BP guidelines is expected spring, 2012.

Table 2.1. Classification of Blood Pressure in Adults.

	Systolic Blood Pressure mmHg	Diastolic Blood Pressure mmHg
Blood Pressure Classification		
Normal – Optimal	< 120	and < 80
Normal Pre-hypertension	120 – 139	or 80 – 89
Hypertension - Stage 1	140 – 159	or 90 – 99
Hypertension - Stage 2	≥ 160	or ≥ 100

Joint National Committee 7th Report (2004). NHLB, National High Blood Pressure Education Program

The prehypertension category was added to the JNC-7 BP classification in 1999, and it is not considered a disease category (JNC-7, 2004). Prehypertension is a designation that was chosen to identify individuals at high risk of developing HBP so that both patients and clinicians become aware of the increased risk for HBP and can then establish goals and objectives for preventing or delaying the onset of this chronic disease (JNC-7). The JNC-7 guidelines recommend that prehypertensive individuals have their BP monitored on a regular basis and that individuals with prehypertension engage in behavioral lifestyle changes such as regular exercise; low consumption of salt, fats, and high calorie food; smoking cessation; low alcohol consumption; and effective management of weight and stress.

The difference between SBP and DBP is known as pulse pressure. Data from the Framingham Study indicated that along with SBP, pulse pressure is also a strong predictor of congestive heart failure (CHF) (Haider, Larson, Franklin, and Levy, 2003). The Framingham Heart Study is a longitudinal cohort study that began in 1948. Subjects were examined and followed biannually for development of CVD (i.e. CHD, CHF, stroke, and intermittent claudication) (Huber, Feinleib, McNamara, & Castelli, 1983). The greatest risk for hypertension-related target organ damage occurs most frequently when DBP is between 90mmHg to 104mmHg.

It is of note that each time changes are made in the classification and cutpoints of HBP, corresponding changes in the incidence and prevalence rates of this disease will be seen. The cutpoints used to classify individuals as hypertensive are dependent on an accurate BP measurement. Blood pressure measurement is discussed in the following section.

Blood Pressure Measurement

Accurate BP measurements are crucial to determining, managing, and controlling HBP. It also has become a major focus in cardiovascular research as well as in clinical practice. Blood pressure measurement guidelines commonly used in the US are developed by the American Heart Association (Grim & Grim, 2008). The American Heart Association [AHA] (2004) updated recommendations for BP measurement and emphasized the use of home BP measuring devices for monitoring and managing HBP. Home BP measuring devices were recommended because periodic BP measurements taken in clinical settings tend to be less reliable (Barclay, 2004). The importance of effective BP measurement is discussed further near the end of this chapter under the

heading 'BP Management and Control'. The protocol and procedures used to obtain indirect arterial BP measurements are presented in the Methods Section, Chapter 4.

Epidemiology of High Blood Pressure

Epidemiology is defined as a study of the causes and distribution of health in human populations (Harkness, 1995). Epidemiological data enhances understanding of HBP by providing information about the mean BP in different regional, national, and global populations and whether HBP is increasing or decreasing in certain populations and subgroups. Further, it informs us of the distal risk factors of HBP that have a broader scope and are more difficult to control or modify such as SES, culture, and sociopolitical influences. It also informs us of the proximal risk factors that are more focused on the individual, easier to modify and control, and that are related to personal behaviors and lifestyle (Harris & Marshall, 2006). The epidemiology of HBP may be characterized as the study of various risk factors along the causal pathway to HBP; risk factors associated with HBP and for which no causal relationship has been determined; the distribution of these risk factors and HBP in human populations; and the manner in which HBP (singularly and in combination with other risk factors) contributes to cardiac events, CVD, and target organ damage.

Hypertension is the major risk factor among a constellation of other risk factors and illnesses (e.g. dyslipidemia, hyperglycemia, insulin resistance, obesity, diabetes, high sodium consumption, sedentary lifestyle, and smoking) that plays a significant causal role in the pathogenesis of CVD, coronary artery disease (CAD), CHF, end-stage renal disease (ESRD), and stroke (Haider, Larson, Franklin, & Levy, 2003; Levy et al., 1999; Marang-van de Mheen & Gunning-Schepers, 1998; Zimmet, George, Alberti, & Shaw,

2005). Severe elevations in BP are highly correlated with increased risks for comorbidities and death. Blood pressure levels $\geq 180/120$ mmHg indicate hypertensive crises and requires immediate intervention to prevent or reduce hypertensive urgencies (e.g. symptoms such as severe headaches, epistaxis, severe anxiety, and shortness of breath) and/or hypertensive emergencies (e.g. damage to target organs that may include intracranial hemorrhage, acute left ventricular [LV] failure, encephalopathy, kidney failure, and hypertensive encephalopathy) (JNC-7, 2004).

Age-adjusted death rates in the US for 2009 indicated that ‘diseases of the heart’ was the number one cause of death (195.0 per 100,000). Stroke (41.9 per 100,000), DM (22.3 per 100,000), and essential hypertension (8.4 per 100,000) were the fourth, seventh, and thirteenth leading causes of death, respectively (Centers for Disease Control [CDC], 2011). The distribution of HBP is becoming more prevalent in adults at younger ages during a time when their knowledge, skills and societal contributions are at the greatest level (Javors, Laws, & Bramble, 2003). Black Americans of African descent, the elderly, those who are overweight, and people of lower SES are affected disproportionately by HBP (Wang & Wang, 2004). These four groups also have a higher absolute risk of CVD. Roger et al. (2011) reported that more than 82 million adults in the US have some form of CVD.

Geographic Perspective of HBP

Geographic patterns of HBP prevalence indicate that HBP is a global health problem. Estimates have shown that in the year 2000, approximately 26.4% of the world’s adult population had HBP (Kearney, Whelton, Reynolds, Muntner, Welton, , & He, 2005). Approximately 6% of all adult deaths (worldwide) have been attributed to

HBP (Cooper & Tayo, 2008). This 6% of hypertensive-related deaths does not include the death rates that occur among adults in isolated and under developed areas of the world such as in the Amazon basin and in regions of the South Pacific where published health statistic are not available (Cooper & Tayo; Cooper, Rotimi & Ward, 1998).

A global north-south hypertension gradient has been suggested by Cooper & Tayo (2008). This north-south gradient is defined by a linear relationship that exists between elevations in population BP and climate temperature changes that occur (latitudinally) moving northward and southward from the earth's equator (Cooper & Tayo).

Populations that live proximal to the equator and experience warmer climate temperatures have lower mean BP levels compared to populations that are more distal to the equator and live in colder climates. On average, people who live in the more industrialized regions of the world and people living in urban areas experience higher BP levels compared to their counterparts who live in less developed and rural areas. Further, elevated BP levels are known to exist in various subgroups living in urban areas. These higher prevalence rates have been associated with social risk factors that are characteristics of urban neighborhoods and communities such as sedentary lifestyle and low health promoting behaviors, low access to nutritious foods and health promoting resources, and high rates of unemployment (Cooper & Tayo).

Some of the highest prevalence rates of hypertension are in Black people who live in the western hemisphere and whose origins can be traced to Sub-Saharan Africa (Grim & Robinson, 1996; Opie & Seedat, 2005). Traditionally, health statistics that are published in the US suggests that the highest BP rates exist in Black African Americans who live in the US. More recent survey data has indicated that the average BP levels

among people living in European countries are higher than the average BP levels reported in North America (Cooper & Tayo, 2008). Russia, Finland, Portugal, Norway, and ethnic groups that live in some of the northern Slavic countries are believed to also have some of the world's highest prevalence rates of HBP (Cooper & Tayo; Kearney et al., 2005).

A major indicator used to identify the geographic distribution of HBP in the US is stroke mortality rates. High BP is reported to be the primary causal risk factor for strokes in the US (Cushman et al., 2000; NIH, 2010). State mortality records indicate that most of the states in the southeast region of the US have death rates due to stroke that are 10% higher than the US average (NIH). These states include: Tennessee, Arkansas, Alabama, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Virginia. Although Kentucky and Indiana are states that are located outside of the southeast region of the US, they too have mortality rates due to strokes that are 10% higher than the national average (NIH).

Prevalence Rates for HBP

Between 2005 and 2008, the hypertension prevalence rate among US adults ≥ 18 years old was 30.9% (CDC, 2011). The mean HBP rates were highest among elderly adults ≥ 65 years old (69.7%), individuals who were receiving Medicare coverage (68.1%), and Black African Americans (non-Hispanic) (38.6%). For the same time period, 79.6% of the population who had HBP was aware of having the disease; of these, 82.0% were Black (non-Hispanic); 80.2% were White (non-Hispanic), and 67.5% were Mexican-Americans. In addition, there were 70.9 % who were being treated; 73.4% Black (non-Hispanic), 72.0% White (non-Hispanic), and 57.5% Mexican-Americans.

There were 47.8 % who had their BP under control; 49.3% White (non-Hispanic), 46.1% Black (non-Hispanic), and 39.3 % Mexican-Americans.

Gender Differences

Gender differences indicate that men in the US under 45 years old have higher prevalence rates of HBP compared to their female counterparts. After age 45, however, the prevalence rates of HBP among women become progressively higher with age. After age 54, women have a much higher percentage of HBP compared to men of similar ages. See Figure 2.1. Gender differences are discussed further in the *Biological Risk Factors* section of this chapter.

Ethnic Differences

Race and ethnicity are overlapping concepts that are often used interchangeably, particularly in the US (Bhopal, 2004). Race and ethnic categories are established by the Office of Management and Budget (OMB) (Kaplan & Bennett, 2003). The categories are based on physiognomy, the process of assigning racial status based on facial features or facial type (Kaplan & Bennett, 2003). Medical records, state vital statistics data, and other health data systems often use different classification systems to code race. As a result, categories often vary from data set to data set and from study to study, thereby, making comparisons between racial groups difficult (LaVeist, 1993).

The use of the term ‘race’ in the health sciences has generated much debate. Opponents of using racial/ethnic categories argue that it reinforces the racial/ethnic division in western society (LaViest, 1993), obscures environmental factors that affects the health of different racial groups (Drevdahl, Phillips, & Taylor, 2006), and therefore should be abandoned. Proponents view ethnic categories as being crucial to research and

surveillance because it documents health disparities in underserved populations with regard to morbidity, mortality, access and utilization of health services, health and illness behaviors, and other health-related issues of interests (LaVeist). However, consensus has emerged that race is a concept central to the study of racism and health disparities and that the term should be used with caution because its history is one of injustice and misuse (Bhopal, 2004). Ethnic and ethnicity are the preferred terms used in this report. The term race/ethnicity will be used only when this is the term used in published data and information that is cited in published reports. The prevalence rates of HBP in different ethnic groups in the US are discussed next.

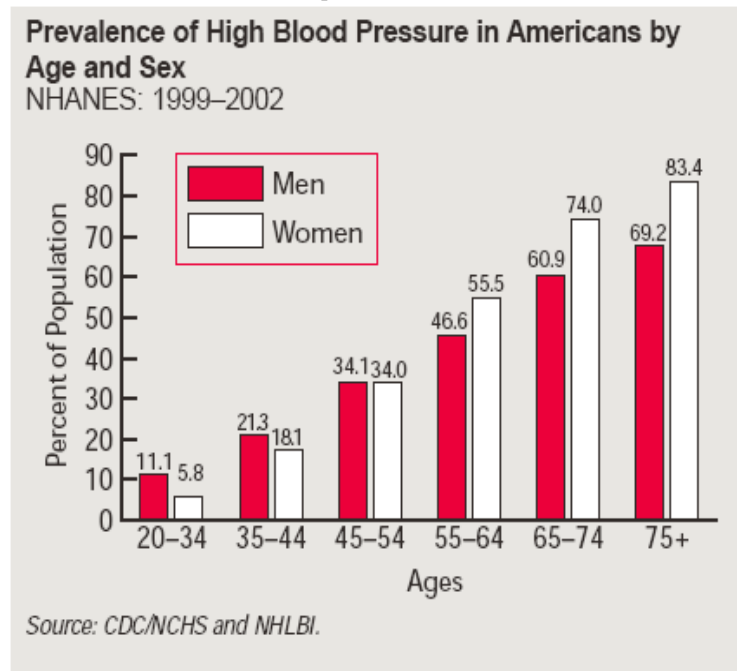
Between 1976 and 2002, the age-adjusted prevalence trends for hypertension for Black African American (Non-Hispanic Black) men and women remained consistently higher than that of their White Non-Hispanic and Mexican-American counterparts (Wolf-Maier et al., 2003). See Figure 2.2. Historically, non-Hispanic Blacks in the US also have higher rates of mortality associated with poorly controlled BP when compared to other ethnic/racial groups (AHA, 2006; Brownley, Hurwitz, & Schneiderman, 1999).

Rates of hypertension also vary substantially within the Black American community. Similar within-group variations among other ethnic groups in the US exist as well. The highest BP rates in the US are in Blacks who are middle aged or older, less educated, overweight or obese, physically inactive, and have diabetes (Collins & Winkelby, 2002). Higher rates of uncontrolled BP are found among African American males, hypertensive individuals who do not adhere to their medication regimen, those under 50 years old, and individuals who have infrequent contact with a physician (Collins & Winkelby). It is surprising that some of the lower rates of hypertension in Blacks

exists among those younger (≤ 18 years old) and also overweight or obese. The rate of hypertension among Blacks Americans born in the US also is significantly higher than the rates of HBP for Blacks who were born in other parts of the world (i.e. Africa and the Caribbean Islands) and immigrated to the US. The same characteristic of HBP distribution exists in the UK. The reasons for these differences are unclear (Cooper et al., 1994).

Blacks in the US experience 1.3 greater prevalence rates of nonfatal stroke and 1.8 times greater rates of fatal stroke (AHA, 2006). More recent data indicates that the highest disparities between African American and White American stroke mortality rates occur among African Americans ages ≥ 35 and ≤ 65 years old. African Americans are three to four times more likely to die as a result of a stroke (Howard et al., 2011). Outside of this age range, the mortality rates for these two groups are similar. African Americans also have 4.2 times greater rates of end-stage kidney disease compared to their White counterparts (AHA, 2006). The rate of kidney failure for African Americans is 998/million population compared to 273/million population for White Americans. Further, African Americans develop end-stage kidney disease and begin treatment at earlier ages (56 years old compared to 66 for White Americans) (National Kidney Foundation, 2011). High BP is the most preventable cause of more than 65,000 deaths among Black Americans each year (AMA, 1998). The death rates attributed to HD and stroke by race/ethnicity are presented in Figure 2.3.

Figure 2.1 Age-Adjusted Prevalence Trends by Age and Gender 1988- 2002. (Based on data published in JAMA 2003; 290, 199-206)



Risk Factors for HBP

Risk factors are features or characteristics that have an association with or are statistically related to a health outcome such as HBP (Last, 2001). High BP is a multidimensional risk factor and multiple system vascular disease (AHA, 2006; Benjamin, Smith, Cooper, Hill & Leupker, 2002; Cunningham, 1995; Roger et al., 2011). High BP is a major antecedent directly associated with increased risks of multiple cardiac events (CVD, CHD, HF, and MI) and also stroke and renal diseases (Greenland et al., 2003). The “relationship between HBP and vascular disease is continuous, consistent, and independent of other risk factors” (JNC-7, 2004, p.12). Risk factors associated with HBP may be characterized as biological (inherited or inborn traits that not modifiable such as age, gender, family history, or Black African American ancestry; environmental features of social environments such as SES, low access to jobs, health services and recreation facilities, and lack of social support); and modifiable behavioral factors such

self-confidence and self-efficacy to engage in health promoting behaviors, psychosocial factors such as depression, and aspects of personal behavior or lifestyle such as being overweight or obese, low physical activity, high dietary sodium and alcohol consumption, insufficient potassium intake, smoking, and ineffective stress management (AMA, 1998; National High Blood Pressure Education Program Working Group [NHBPEP], 1993; Whelton et al., 2002). High normal BP is also a modifiable risk factor for HBP. Beginning at a BP of 115/75 mmHg, the risk for CVD doubles with each increment of 20/10 mmHg (Chobanian et al., 2003). The Framingham Study identified SBP as a more important predictor of CVD compared to DBP. The absolute risk for CVD increases at age 50 years and older among people with a SBP \geq 140mmHg. . Individuals 55 years and older with a BP < 120/80 mmHg (normotensive) have a 90% lifetime risk of developing hypertension (Chobanian, 2003).

Figure 2.2. Age-Adjusted HBP Prevalence Trends Race/Ethnicity & Sex and Gender (1988-2002)

(Based on data published in JAMA 2003; 290, 199-206).

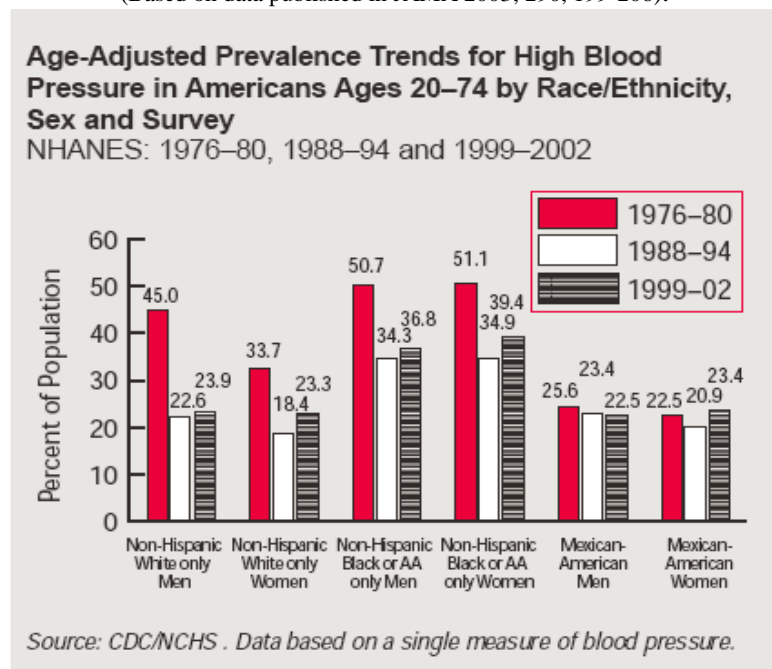
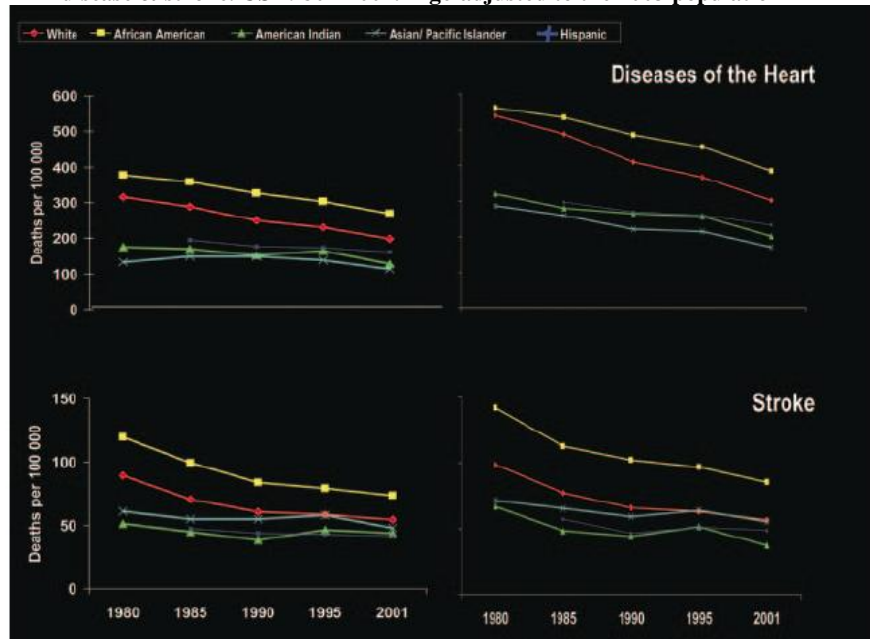


Figure 2.3. Age-adjusted death rates by gender & race/ethnicity-heart disease & stroke. US 1980 - 2001. Age-adjusted to the 2003 population

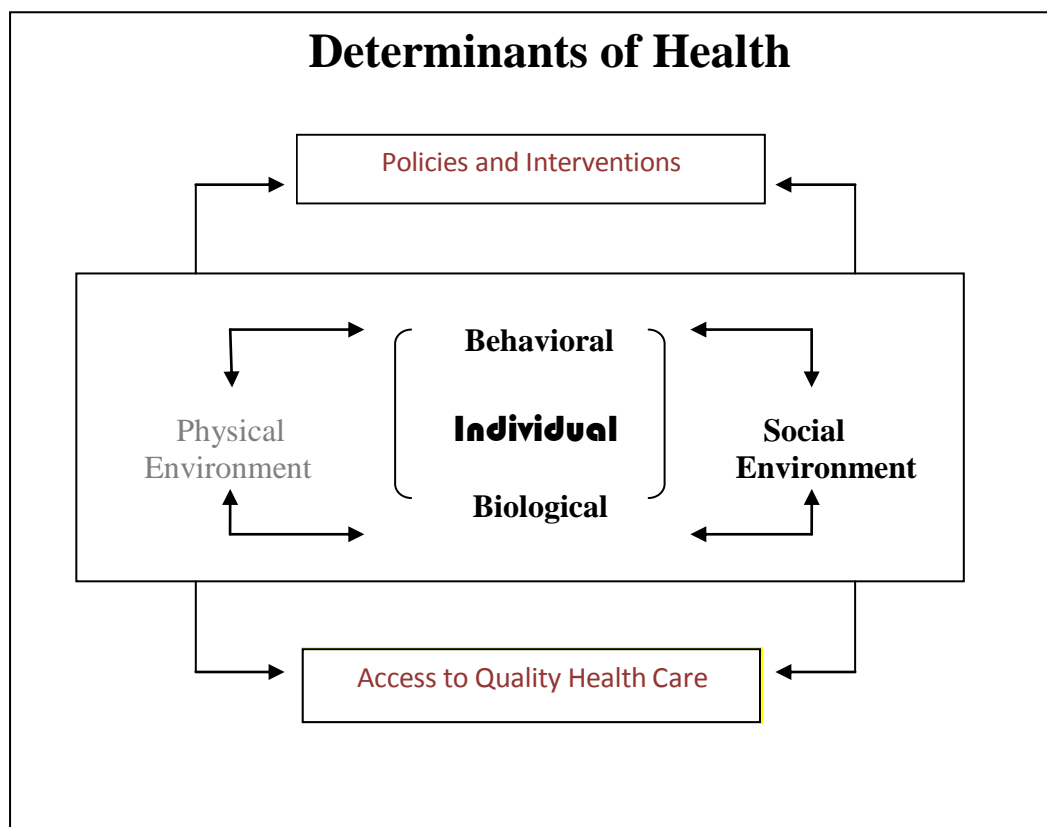


CDC Health U. S. Circulation; 2005. 111; [1230-1241](#)

A socio-ecological approach is used in this study to examine certain risk factors associated with HBP. The socio-ecological approach recognizes multiple interactions and symbiotic relationships between biological, environmental, and personal/behavioral risk factors and HBP (Anderson, 1989). That is, HBP is determined by a combination of biological factors such as age, gender, ethnicity; factors of the social environment such as SES, SC, and social support; and personal/behavioral factors such as eating habits and exercise self-confidence, chronic disease management self-confidence, and antihypertensive medication adherence self-efficacy, and depression. These categorical risk factors are depicted in the Determinants of Health Model (DHM), a population-based model by the Centers for Disease Control (CDC) that is commonly used to describe various risk factors associated with acute and chronic illness (CDC, 2000). See Figure 2.4. The three risk factor categories (biological, social environment, and personal/behavioral) examined in this study are also highlighted in bold font in Figure 2.4

Policies/interventions and access to quality health care services are also categorical risk factors in the DHM, and they are known to influence effective BP management and control (Anderson, 1989; JNC-7, 2004). Although policies/interventions and access to quality health care services are not examined in this study, the importance of their respective contributions to HBP is discussed in this section in addition to the biological characteristics, features of social environments, and personal/behavioral risk factors that are included as independent variables in this research study.

Figure 2.4 Determinants of Health Model (Healthy People, 2010)



The relations between HBP and biological risk factors (age, gender, ethnicity), risk factors of the social environment (SES, SC, social support); and those that are

characterized as personal/behavioral risk factors (awareness of BP, lifestyle behaviors, eating habits and exercise self-confidence; chronic disease management self-confidence, antihypertensive medication adherence self-efficacy, and depression) are examined in this study. These 12 individual risk factors and their association with HBP are discussed next.

Biological Risk Factors. The terms biological risk factors and genetic risk factors are often used interchangeably. These risk factors are inherited physiological traits (risk factors with which individuals are born), and they are personal characteristics that cannot be modified or changed. Biological risk factors are also responsible for many of the physical and mental health assets and problems that individuals acquire during the life course (JNC7, 2004). In this risk factor category, genes and the genetic predisposition of HBP is discussed followed by the biological risk factors age, gender, and ethnicity.

Many of the earlier biological research studies focused on genetic abnormalities and rare forms of HBP (e.g. mineralocorticoid excess syndrome and mineralocorticoid-remediable aldosteronism). Most of these studies suggest that multiple genes, complex genetic variants, and mutations of alleles have additive affects that are casually linked to HBP (Weder, 2008). Alleles are “different versions of a gene with structural differences at the DNA and RNA levels that result in differences in gene expression and protein structure” (Weder, p.229). The new and evolving science associated with gene expression suggests that the genes that influence HBP are activated or turned on when exposed to certain elements of the environment and by personal behaviors. The two genes natriuretic peptide precursor A (NPPA) and natriuretic peptide precursor B (NPPB)

have been linked to the etiology of HBP in humans in recent years. Both genes have been linked to natriuretic peptide concentrations in the blood and are believed to contain properties that lower BP, contribute to variations in BP, and influence HBP (Newton-Cheh et al., 2009). The best evidence to date suggests that “multiple genotypes, phenotypes, and subtypes that are linked to hypertension have only a small effect on BP” (Weder, p. 229). A major limitation of most genetic-HBP research studies involves external validity and the inability to apply the finding to the general population (JNC-7, 2004). Neither genes nor gene expression are examined in this study. Age, gender, and ethnicity are the biological risk factors examined in this study, and they are discussed next.

Age. Age is a biological and dominant non-modifiable risk factor for HBP examined in this research study. Whether aging is a causal risk factor for HBP remains unclear. During the life span, the DBP steadily increases until around the sixth decade of life, and it progressively decreases or stays relatively the same thereafter (JNC7, 2004). Increases in SBP, however, have a tendency to become more severe during the life course, thereby making it a better predictor of CVD (or a cardiac event) once individuals reach the age of 50 years and older (JNC-7). As people increase in age, unidentified and corresponding biological processes also are present that influence hardening of arterial blood vessels, a major contributor to HBP. Certain personal behaviors such as high fat consumption often results in increased levels of LDL that subsequently impedes arterial blood flow. Further, high caloric intake/output imbalances and low physical activity that contribute to overweight and obesity also are known to contribute to hardening of the arteries and subsequent elevations in BP.

Gender. The subjects in this study include both men and women. Gender differences in some of the risk factors associated with HBP in these two groups exist. The prevalence rates of SBP in men are higher than the SBP rates of women for the first five decades of life (Pimenta & Oparil, 2008). Women tend to have lower BP prevalence rates prior to the 6th decade of life and until the onset of menopause when SBP prevalence rates for women become higher than the SBP prevalence rates for their male counterparts. Some of the gender differences appear to be hormonal and are associated with the over production of pituitary hormones, weight gain, estrogen withdrawal, a combination of these, and “undefined neurohumoral influences” (e.g. variations in epinephrine and norepinephrine levels) (Pimenta & Oparil, p. 270). Hypertension is two to three times higher in women who are taking oral contraceptives, particularly among women who are older and women who are obese (JNC-7, 2004).

Ethnicity. High BP among Black African Americans is the focus of this study. Being Black, non-Hispanic and of African descent (based on self-report) were among the inclusion criteria discussed in Chapter 4. Race and ethnicity are terms that are commonly used interchangeably in medicine and health disparities research. Both terms have commonly been used as a proxy for social class and SES (Johnson, 2000; Williams, 2005). In this research study, ‘ethnicity’ is the preferred term. It refers to people with common geographic origins, family patterns, language, cultural norms traditions, and similar life experiences (Johnson, 2000; Williams, 2005).

Black African American (non-Hispanic) is the ethnic category considered the most dominant genetic/biological risk factor for HBP in the US. US health sciences research has a persistent tendency to define race in terms of underlying genetic

homogeneity and to understand racial differences in terms of innate biological differences only (Blauner, 1972). Public health research in more recent years, however, has begun to conceptualize race as a sociopolitical construct with strong cultural and ethnic components rather than as a measure of biological distinction (Williams, 1999). Biological differences in BP based on race and ethnicity remain controversial. Higher prevalence rates of HBP for Black Americans of African descent have been recognized for more than 100 years (Cooper et al., 1997). However, belief is growing among researchers and geneticists that conventional hypotheses associated with racial and ethnic disparities in BP should be abandoned (Cooper et al., 2008). Research continues to show there are greater variations in mean arterial BP within the same racial/ethnic group and fewer mean arterial BP variations between different racial/ethnic groups (Cooper et al.). These findings support research suggesting that clusters of various biological, environmental, and behavioral risk factors and multiple causal pathways to HBP are present.

Environmental Risk Factors. The environment is categorized as either physical environment or social environment when examining environmental influences on health and disease. Both physical and social environmental risk factors are discussed in this section. However, only characteristics of the social environment (SES, SC, social support) are examined in this study. It is of note that social environments and physical environments are linked and do not exist independently of each other (Yen & Syme, 1999).

Physical Environment. The physical environment includes features such as altitude; longitude; latitude; and geographic areas such as cities, urban neighborhoods, and rural communities. It also includes atmosphere and the tangible elements that can be seen, touched, heard, smelled, and tasted. Temperature, radiation, and ozone are

considered intangible elements of physical environments. Recall the effects of latitude on global prevalence rates of HBP in the ‘Geographic Perspective of HBP’ section of this chapter. The physical aspects of neighborhoods and communities in which people live often increases their exposures to deleterious factors of the environment such as toxic waste, air pollution, deteriorated buildings, overcrowded conditions, poor sanitation, poorly lighted streets, traffic noise and congestion, few green-spaces, poverty, and crime. These elements are known antecedents of acute and chronic stress, which also are risk factors for HBP and CVD. Characteristics that are often associated with elevated BP levels in individuals who live in economically-deprived neighborhoods also includes limited access to primary, secondary, and tertiary health care services; markets that provide nutritional food options; an abundant access to fast food outlets, liquor stores, and tobacco products; and few safe and open spaces for walking, recreation, and engaging in physical activities (Isreal et al., 2006).

Social Environment. The social environment refers to man-made environments. Contextually, the communities with which individuals identify and the continuing interactions between natural and man-made components are all part of the social environment (Lillie-Blanton & LaVeist, 1996). It includes buildings and other physical structures, communities and neighborhoods, as well as the social networks and social characteristics embedded within them. Social environment also includes SES, power arrangements (e.g. individual and political empowerment), social influence, and sociopolitical structures known to influence health and health behaviors at the individual, family, and community levels in addition to health policies and services at the broader systems level. Social factors examined in this study discussed next include SES, SC, and social support.

Socioeconomic status in US health statistics includes income status and level of education. According to US Census reports (2010), inner city neighborhoods have become

more economically depressed (have lower SES based on level of education and incomes that fall below established poverty levels) during the past two decades. This outcome has been attributed to factors such as advances in technology and increases in the percentage of unskilled workers; the out sourcing of manufacturing jobs to countries outside of the US; an influx of poor, undocumented immigrants to urban areas; a higher density of inhabitants living in low-income housing and the subsequent rise in crime statistics; and the increased percentage of individuals and families who experience transitional and chronic homelessness (Isreal et al., 2006.; Diez-Roux et al.,1997). Historically, US society has shown an unwillingness to invest in resources to address the health needs of individuals and subgroups living in poor areas (Kerner, Dusenbury, & Mandelblatt, 1993). The majority of Black Americans of African descent in the US live in or near urban neighborhoods where HBP prevalence rates are highest.

Social environments are comprised of units known as social networks. Social network refers to the relationships that exist between members of a group (Saguaro Seminar, 2008). Defining characteristics of social networks include interactions such as those that exist between individual acquaintances, family members, friends, coworkers, individuals and public organizations and institutions such as law enforcement, the judicial system, and transportation services. Social networks also include the relationships between individuals and the workplace, community groups, civic and political participation, and the by-products of these relationships such as social harmony and social discontent. All of these features of the social network influence health outcomes.

Social networks often include distinct and relatively small social settings where festive ethnic and cultural gatherings commonly take place. Ethnic and cultural gatherings often take place in social environments where people are expected to engage

in unhealthy behaviors such as the consumption of calorie rich foods and alcoholic beverages (Swinburn, Egger, & Raza, 1999). Anthropological research has found that cultural values often foster group expectations associated with over indulgence and consuming large quantities of food and drink. Various symbolic meanings and shared values in many socio-cultural networks also center on food being ‘good for thinking’ as well as being “good for eating” (Caplan, 1996, p. 214). In many instances, “nutritional and economic concerns become irrelevant; palatability varies by culture and subculture; and people eat a lot of what they consider highly palatable, even when there is no hunger” (p. 214). In poor communities, it is common for families and individuals of low SES to limit their purchases to cheaper, high calorie-dense foods high in salt, starches, fats, and sugars. The costs of healthy eating are much higher than they are for unhealthy eating. These foods (commonly referred to as comfort foods) more easily satisfy hunger, and they are more readily accessible and acceptable to children and low income families (Caplan). Many of these comfort foods have been implicated in various diseases such as HBP, hypercholesterolemia, diabetes, and obesity because of their high fat, sugar, salt, and low fiber content (Caplan).

Another important feature of social networks that has become a focus in health research in recent years is SC. Social capital is a new concept in nursing. It also is controversial with regard to its definition, properties, and defining characteristics. Social capital theory was used to develop the conceptual framework in this study and as a study variable to determine whether a relationship exists between SC and BP in Black African American adults; a major aim of this study.

Hsieh (2008) conducted a conceptual analysis of SC within a health context to further develop the concept in nursing. The analysis demonstrated that SC consists of intangible assets and properties such as social ties and relationships that exist between individuals, groups, and organizations; reciprocal trust between members of the group; and group expectations and social norms. It increases the potential for acquiring intangible resources such as empowerment, prestige, and social influence and tangible assets such as financial resources, jobs, education, and goods and services such as health insurance and health care. SC also increases the quality of community participation and sense of community at the individual, family and community levels.

Social capital theory, the dimensions of SC, types of SC, and the association between SC and health are discussed further in the theory chapter, Chapter 3. The last risk factor of the social environment that will be discussed in this literature review is social support.

The definitions of social support vary. However, a commonly accepted definition identifies social support as general support and assistance that is exchanged between individuals within the context of interpersonal relationships (Lin Simeone, Ensel, & Kuo, 1979). Social support is dependent on the strength of social ties between individuals within social networks (Hirsch, 1981). It promotes psychological wellbeing and serves as a protective factor that helps people cope with chronic stress, a factor that is known to increase heart rate, elevate BP, and contribute to other chronic illness (Lucy, 2007). Four types of social support have been identified by House (1981). This includes; (1) emotional support – providing empathy, trust, caring, or concern; (2) instrumental support – providing direct help and assistance such as time, money, and labor; (3)

informational support - providing advice, information, or suggestions; and (4) appraisal support – providing affirmation or feedback.

Research has shown that social support from family, friends, and peers are associated with improvements in health-related behaviors such as physical activities, chronic disease self-management, and medication adherence (Dennis, 2003; Gallant, 2003). A study by Dennis, Markey, Johnston, Wal, and Artinian (2008) examined the role of stress and social support on predicting depression in a sample of hypertensive African American adults and found that there was a statistically significant relationship between HBP and social support ($p < 0.001$) and between HBP and stress ($p < 0.001$).

Behavioral Risk Factors. Personal/behavior risk factors refer to characteristics that influence personal choices and individual actions associated with responses and reactions to internal stimuli and external conditions (CDC, 2011). The personal choices that people make, behaviors that they engage in, and their lifestyle choices are modifiable risk factors that remain the primary focus of health promotion and illness prevention strategies in western society. The major premise of this perspective is based in classical liberal philosophy that postulates individuals determine and are accountable for their own illness and health. Classical liberalism is considered by many to be an adverse, underlying sociopolitical ideology that discounts the social determinants of health. This belief has also forged a wedge between those who support quality health care as being a human right (Drevdahl, Kneipp, Canales, & Dorcy, 2001). Personal/behavior risk factors that influence BP are discussed next.

Modifiable risk factors associated with nutrition, physical activity, BP awareness, and depression and their relationship to effective BP control are examined in this study.

The relationship between BP and eating habits and exercise self-confidence, chronic disease management self-confidence, and self-efficacy as it relates to antihypertensive medication adherence are also examined.

The CDC (2011) recommends an average daily consumption of less than 2,300 mg of sodium per day. For groups at high risk for HBP and CVD (people with diabetes, chronic kidney disease, adults \geq 51 year old, and African Americans), the recommendation is less than 1,500 mg of sodium and supplementation with 4,700 mg of potassium rich fruits and vegetables. The recommended daily allowance (RDA) for fat is \leq 65 grams, based on a 2,000 cal/day diet. The Healthy People 2010, Objective 19.5, was for 75% of American adults \geq 18 years old to consume two or more servings of fruits daily, and Objective 19.6 was for 50% of adults to consume at least three or more servings of vegetables per day (CDC, 2010). These Healthy People 2010 Objectives were for the period 2000 through 2010 when this study was conducted. The USDA is the federal agency responsible for regulating the nutritional information on food labels. This agency has developed educational tools (printed materials and videos) to help consumers read and evaluate the nutrition labels on packaged foods to facilitate making healthy food choices.

Personal/behavioral factors examined in this study also include self-confidence and self-efficacy. Both are predictors of how effectively people will perform a specific task (Heslin & Klehe, 2006). Self-confidence is closely associated with motivation to perform an act (Heslin). Self-efficacy is a mechanism serving as a mediator between knowledge acquisition and performance (Bandura, 1982). The basic premise of self-efficacy is that cognitive processes have a significant influence on human behavior

patterns (Bandura, 1977). It is a self-regulatory process that results from environmental, behavioral, and personal interactions. It involves perceived expectations of one's capability to perform a task or action (Clark & Dodge, 1999). Further, self-efficacy centers on people's perception of their ability to successfully regulate events in their lives in order to produce or achieve desired outcomes. Individuals are more likely to perform actions that they believe they are able to perform successfully. Moreover, they tend to avoid activities that they believe exceed their capabilities (Bandura, 1982). Although the terms self-efficacy and self-confidence are used interchangeably, self-efficacy is considered a stronger predictor of behavior (Heslin). Behavioral risk factors associated with self-confidence (eating habits, exercise, and chronic disease management) and self-efficacy (antihypertensive medication adherence) are examined in this study. Blood pressure awareness and depression are the remaining personal/behavioral risk factors that are included as study variables. These two risk factors and the need for patients to have awareness and understanding of their personal role in maintaining effective BP control are discussed next.

The lack of awareness of personal BP levels and of the detrimental consequences that are associated with HBP have been identified as ongoing barriers to effective BP control, particularly among African Americans (Martins, Gor, Teklehaimanot, & Norris, 2001; Oliveria, Chen, McCarthy, Davis, & Hill, 2005). The 2007 - 2008 National Health and Nutrition Examination Survey (NHANES) indicates that 70.3% of Americans were aware of having HBP (Wright, et al., 2011). A national online survey of African American adults ≥ 18 years old (n=506) conducted in 2009 reported that 68.0% knew that HBP causes stroke; 53.0% linked HBP to heart attacks; and 18.0% indicated that

HBP could lead to end stage renal failure (Pressure Points, 2009). Subjects' awareness of the consequences of untreated HBP also was low in Shane, Muntern, Kawasaki, Hyre, and DeSalvo (2008) who examined hypertension knowledge in a convenience sample that included 89.0% urban African American adults ≥ 18 years old (n=296).

Approximately 72.0% of the subjects reported that HBP leads to osteoporosis; 69.0% indicated that HBP causes Alzheimer's disease and approximately 58.0% believed HBP causes cancer. Individuals also need an understanding of the overall role expectations and personal responsibilities that are needed to achieve effective BP control. The role of the individual in controlling BP is discussed next.

Patient's Role in Blood Pressure Control. The first responsibility of the patient is to have knowledge of the risk factors associated with HBP. Effective BP control begins with being aware of BP values, knowing the target BP goal, and being aware of behavioral changes that influence BP. Patient adherence to the treatment regimen is crucial to effective BP management and is discussed next.

Patient adherence is multifaceted, and it is a major determinant of effective BP management. Adherence is defined as a collaborative effort of health care providers and health care consumers to achieve mutually derived goals for health (Barofsky, 1978, Becker, 1991). Research studies have shown improvements in BP control and the need for fewer antihypertensive medications among Black American adults who reduce dietary sodium intake (Beard, Cooke, & Gray, 1982), increase dietary intake of potassium (Brancati, Appel, & Seidler, 1996), and engage in exercise of moderate intensity (Kokkinos, Narayan, & Colleran, 1995). There also is evidence that reducing alcohol consumption (Fuchs, Champbless, Whelton, Nieto, & Heiss, 2001) and body weight

(Davis et al., 1993) decreases SBP. Frequent BP monitoring and adherence to the antihypertensive regimen also are critical to effective BP treatment and control (Chobanian et al., 2003; Wang & Vasani, 2005). The influence of personal perceptions on adherence behaviors is discussed next.

Patients' negative perceptions of providers are known to influence adherence rates. Studies have shown that (1) the provider not describing how long it would take for prescribed medicine to take effect; (2) the patient not being provided sufficient information on the possible symptoms; (3) failure to discuss the seriousness of the illness; and (4) failure to discuss the examination findings of test results contribute to lack of adherence (Cegala, Marinelli, & Post, 2000; Hunt, Pugh, & Valenzuela, 1998). Patients' taking an active, participatory role in establishing treatment goals and objectives is crucial to improving antihypertensive medication adherence rates and achieving desired health outcomes.

Patients along the socioeconomic continuum also have attributed low rates of adherence to (1) fear of medication side effects; (2) a belief that the medication will be of no benefit; (3) the advice is too difficult to implement; (4) feeling better; (5) inability to afford the medication; (6) differing goals; and (7) patients juggling multiple competing demands in their lives (Cegala, Marinelli, & Post, 2000; Hunt, Pugh, & Valenzuela, 1998). Patients have reported that the lack of health provider recommendations are associated with failure to engage in physical activity, inadequate weight management, and failing to change adverse health behaviors (e.g. excessive alcohol consumption, use of tobacco products, high-sodium in-take) (Cabana et al., 1999). Patients' adherence rates are enhanced when adequate social support, effective communication, and collaboration

on mutually derived goals between the health care providers and health care consumers are present (Barofsky, 1978, Becker, 1991). A discussion of depression is presented next and will conclude the discussion of personal/behavioral risk factors examined in this study.

Depression is characterized as a recurrent or chronic mental disorder that may be accompanied with a loss of interest or pleasure, feelings of guilt and low self-worth, sleep disturbances, poor appetite, low energy, and poor concentration (Wright, et al, 2011). This disorder may lead to substantial impairments in one's ability to take care of everyday responsibilities. It may also lead to suicide (World Health Organization, 2011). Depression is more prevalent among women, non-Hispanic Black Americans, and adults between 40 and 60 years old compared to other demographic groups (Wright, et al.). The SES and life experiences of African Americans places them at an increased risk for mental health disorders compared to other racial/ethnic groups in the US, particularly with regard to depression (Mental Health America, 2011). Often, depression is misdiagnosed in this population. Similar to HBP and other chronic conditions, it is not uncommon for depression to have advanced to a crisis or emergency stage in African Americans prior to seeking treatment (Primm, 2002). Delays in seeking care for depression have been attributed to historical distrust of the medical community, social stigma that is attached to depression, and a preference for counseling and behavioral therapy rather than pharmacological interventions (Primm). The NHANES, 2005-2006 report (2009) indicates that the prevalence rate for depression in non-Hispanic Blacks in the US was 8.0% compared to 4.8% in non-Hispanic Whites and 7.6% in Mexican-Americans (Hajjar & Kotchen, 2003). Combinations of biological, social, and behavioral

factors are thought to influence the relationships between depression and HBP. A more definitive association remains unclear. It has been suggested that people with depression may engage in unhealthy behaviors such as smoking, drinking, poor eating habits, sleep deprivation, inadequate physical activity, and poor weight management, all which are behaviors that contribute to HBP and CVD (Grewen, 2004).

Modification of certain lifestyle behaviors and adverse health practices that place individuals at an increased risk are known to prevent or delay the onset of hypertension, reduce BP levels, enhance antihypertensive drug efficacy, and decrease over risk for CVD (JNC-7, 2004). However, it is of note that research has shown that risk factors associated with personal/behavioral characteristics explain less than 30% of the variation in HBP and CVD occurrence (Yen & Syme, 1996).

An overview of the remaining two risk factor categories in the DHM (access to quality healthcare and policies/interventions) is discussed next. Recall that the relationship between HBP and the risk factors in these two categories are not examined in this research study.

Access to Quality Healthcare. This risk factor refers to having the liberty to acquire a high standard of healthcare and health-related services (CDC, 2000). Health care not only includes services received through health care providers but also health information and services received through other venues in the community. Currently, the US healthcare system does not provide clinically appropriate and cost-effective healthcare needed by various high risk populations and subgroups (Institutes of Medicine [IOM], 2003). The ineffective management of chronic diseases such as HBP and CVD

and the disparities in healthcare services that exists between racial/ethnic groups have become a national priority in the US (IOM, 2003).

Limited Access. Vast differences exist between the health status of White Americans of European descent and other ethnic groups in the US. Many of these differences are linked to differences in social class (Kerner, Dunsenbury, & Mandelblatt, 1993). The overall health status and quality of health care for ethnic minorities, the uninsured, and groups with the lowest SES (education and income status) are worse compared to the general US population (Mensah & Dunbar, 2006). These vulnerable groups, particularly Black Americans, tend to have the most difficulty accessing health care services and receiving culturally appropriate, high standards of care from health care practitioners. This includes receiving diagnostic and therapeutic interventions based on clinical practice guidelines. Three research studies conducted to examine unequal treatment and ethnic disparities associated with diagnostic and therapeutic interventions are described next.

Unequal Treatment. Karris, et al. (2006) examined whether established guidelines for treating severe hypertension (e.g. $\geq 180/110$ mmHg) were being implemented at four inner-city emergency departments (ED). The EDs were in teaching hospitals of medical schools that provide services to economically disadvantaged patients in Atlanta, Philadelphia, Miami, and New York City. There were 423 patients who presented with severely elevated BP values and were included as subjects in the study (n=423). Additional symptoms documented during the ED visits included dyspnea (OR 3.1; 95% CI 1.1, 8.7) and chest pain (OR 3.0; 95% CI 1.2, 7.6). Seventy-six percent of

the subjects were Black, 18% were Latino, and 9% of the subjects were White, non-Latino. Forty-three percent of the subjects were uninsured.

According to ED guidelines, all patients should receive the following tests whenever they present with BP \geq 180/110 mmHg. These tests include: (1) ECG; (2) chest radiography; (3) serum chemistry profile; (4) funduscopy; and (5) urinalysis. These tests are routinely recommended to assess whether patients have acute hypertension-related target-organ damage due to severe elevated BP levels (Karris et al., 2006). All five tests were performed on only 6% of the subjects. The frequencies associated with each test were as follows: (1) ECG – 53%; (2) chest radiography – 46%; (3) serum chemistry profile – 73%; (4) funduscopy – 36%, and (5) urinalysis – 43%. Fifty-three percent of the subjects were discharged after their ED encounter (n=226). An antihypertensive medication regimen was initiated or modified in 27% of the patients, 24% received written discharge instructions regarding HBP, and only 29% of the subjects received either written instructions to follow-up with their primary provider or written recommendations for further CV assessments after discharge.

Additional evidence to support poor access to quality healthcare services and unequal treatment is a meta-analysis by the American College of Cardiology Foundation (2002) that examined ethnic disparities in cardiac care. The inclusion criteria for the study were as follows: (1) studies were conducted primarily in the US; (2) the primary purpose of studies was to investigate racial and ethnic differences in cardiac care; (3) studies reported original (independent) findings (versus reviews, editorials, or commentaries); (4) the studies presented actual quantitative and comparative data that allowed the reader to independently assess findings; and (5) the studies identified specific

racial and ethnic groups for comparison to Whites. In addition, the studies had well-defined parameters, strong internal validity, and measured and controlled for critical variables such as age, gender, health status, insurance status, co-morbidities, severity of HD, and SES.

The ethnic groups identified among the various research studies (n=81) that took place in 1984 through 2001 included Whites, African Americans, Native Americans, Asians, and Latinos. The categories and the number of studies that found racial/ethnic differences in cardiac care were as follows: diagnostic procedures -41 studies; revascularization (e.g. CABG and PTCA) -63 studies; thrombolytic therapy -14 studies; drug therapy -11 studies; and other cardiac procedures and treatment -9 studies.

African Americans were less likely than Whites to undergo PTCA in 13 of the 20 more rigorous studies that calculated odds ratios (OR) to compare PTCA use (the statistically significant odds ratios ranged from 0.20 to 0.80. African Americans were less likely than Whites to undergo CABG in 21 of the 23 more rigorous studies that calculated odds ratios to compare CABG use (OR ranged from 0.26 to 0.99, 95% CI). African Americans were less likely than Whites to receive thrombolytic therapy in two of the three more rigorous studies that calculated odds ratios (OR ranged from 0.51 to 0.76, 95%CI). Three studies found that African Americans were less likely to receive at least one of the following drug therapies: aspirin and β blockers (on admission and at discharge), heparin, and lidocaine. Overall, access to care and the quality of care provided to African Americans were less than care received by their White counterparts.

In addition to focusing on lack of access to appropriate diagnostic and treatment services, health disparities research has begun to examine provider-related factors such as

patient-provider communication barriers and provider discriminatory health care practices that contribute to CV health disparities (Mensah & Dunbar, 2006). The role of physicians and nurses in effective BP management are discussed in the next two sections below.

Physician's Role in BP Control. The physician's professional role in effectively managing BP has been well scrutinized in recent years (Wang & Vasan, 2005). The evidence shows that professional and personal attitudes, beliefs, and practices of physicians and primary care providers have a significant influence on HBP prevention and control. The need for medical providers to recognize and alleviate patient-provider barriers and to provide hypertensive patients with access to resources that address social and economic barriers was the major emphasis in the Hypertension in African Americans Work Group (HAAWG) consensus report (Douglas et al., 2003). This report recommends HBP management guidelines and interventions for hypertensive Black Americans of African descent and is discussed further in the *Policies and Interventions* section of this chapter. Barriers to BP control identified by physicians and primary care providers are discussed next.

Since 1960, the cutpoint value for diagnosing hypertension has changed from $\geq 160/95$ mmHg to the current cutoff value $\geq 140/90$ mmHg, and these changes in BP goals have presented challenges to clinicians assessing patients for hypertension (Campbell-Scherer & Green, 2005). In addition to the continuing expansion of expectations, guidelines, and recommendations from varying specialty groups and professional associations, the clinician's role has also been complicated by the need to provide comprehensive culturally competent care within a 10 to 15 minute time frame

that is typically allowed in primary care settings and in general practice (Mechanic, 2003).

Further, physicians have expressed lack of confidence in their ability to adequately affect behavioral lifestyle changes in patients (Steinoff & Smith, 2003; Wechsler, Levine, Idelson, Schor, & Coakley, 1996). Physicians' perceptions of barriers to effective hypertension treatment and control include the following: (1) failure of patients to make necessary life-style changes; (2) failure to take medications as instructed; (3) patient lack of understanding; (4) physician fees, (5) cost of medications, and (6) side effects of medication (Clark, 1991). One study that examined chronic care attitudes related to cardiovascular risk reduction found that physicians believed routine office follow-up visits were ineffective in reducing risks (Castaldo et al. 2005). Although most of the clinicians in the study rated cardio-cerebro-peripheral vascular disease prevention as very important to their practice, they were most frustrated by the low success rates (43%) of patients' lifestyle changes related to effective BP management. The primary reasons for lack of success in reducing cardiovascular risks were linked to 'lack of time with patient' (60%) and 'patients disinterest in engaging in lifestyle behavioral changes' (59%) ($p < .001$) (Castaldo et al.). Research also has shown that personal social bias among physicians and primary care providers influences the level of care that patients receive (Steinoff & Smith, 2003; Wechsler, Levine, Idelson, Schor, & Coakley, 1996). The low standard of health care that results contributes to poorer health outcomes and health inequalities.

Additional healthcare provider characteristics that contribute to the low rates of effective BP management include (van Ryn & Fu, 2003); (1) unintentional or intentional

reinforcement of societal messages regarding patients' competence, fundamental values, and self-reliance; (2) lower expectations for socially disadvantaged patients that is attributed to their education, income, ethnicity, and other stigmatized characteristics; (3) poor communication skills regarding health promotion strategies, disease prevention behaviors, and treatment options; and (4) health care providers serving as gatekeepers to specialty care and other health services.

Social cognition is a causal model and integrative approach for explaining how health practitioners often make sense of other people, namely patients. This involves "processes that underlie social perception, social judgment, social interaction, and social influences" (van Ryn & Fu, 2003, p. 248). Social cognition also has implications for understanding how race and ethnicity influence health-provider behaviors (van Ryn & Fu, 2003). Several underpinnings of the model include the following: (1) humans share an adaptive cognitive strategy for making the world more manageable by categorizing and generalizing techniques to simplify massive amounts of complex information and stimuli to which they are exposed; (2) humans universally apply stereotypes when making sense of other people; (3) people develop beliefs and expectations about categories or groups of people and generalize these beliefs and expectations to all individuals mentally assigned to a given category or group; and (4) when people mentally assign an individual to a particular class or group, they unconsciously and automatically assign the characteristics of that group to the individual in question, a process referred to as "stereotype application" (p. 250).

Physicians' negative perceptions of clients were also identified by van Ryn and Burke (2000) in a study of eight New York State hospitals that performed angiograms.

One-hundred and ninety three physicians and 842 patient encounters were used to assess the effect of patient's race and SES on physicians' perceptions of patients. The findings indicated that several factors contributed to physicians' unfavorable perceptions of Black patients compared to White patients. Sixty-seven percent of Black patients were perceived as having no risk for substance abuse compared to 79% of White patients, OR = 0.58, CI 95%; and 42% of the Black patients versus 57% of Whites were rated as having no risk for noncompliance, OR = 0.62, CI 95%. Blacks were half as likely (14% Black vs. 26% White) to be perceived as desiring an active lifestyle, OR = 0.47, CI 95%. They were perceived as being less likely to participate in cardiac rehabilitation if it was prescribed (34% of Black vs. 47% White), OR = 0.66. Overall, physicians rated Blacks as less intelligent and less educated than Whites as well as less pleasant and less rational (van Ryn & Burke). Physicians also expressed less affiliation towards Black patients, and physicians' perceptions of patients were influenced by the patients' race and SES (van Ryn & Burke). These perceptions appear to have a significant and negative impact on patient-provider relationships. When patients have positive experiences and trust their clinician, motivation to actively participate in self-management improves (Chobanian et al., 2003; NHBPEP, 1993).

Nurse's Role in BP Control. High BP is the most common primary diagnosis in the US each year (Cherry & Woodwell, 2002) and accounts for approximately 35 million annual visits to physicians' offices, making it the number one reason for physician office visits (Cherry & Woodwell, 2002; Hodgson & Cai, 2001). The need to improve BP management and control has been identified in the US and UK. There is a paucity of information in the literature on the effectiveness of nurse-managed BP programs in

primary care settings. Further, little is known regarding nursing interventions that are effective in community settings (Oakeshott, Kerry, Austin & Cappuccio, 2003). A meta-analysis (n=10) that examined nurse-managed outpatient BP programs in primary care settings in the UK found no statistically significant results with regards to effective BP management by nurses who were licensed to prescribe and dispense medications (Oakeshott et al., 2003). Similar studies that examined effective BP management by nurses who were licensed to prescribe and dispense medications in the US were not identified. Nursing studies in US that examined the effectiveness of BP management by registered nurses (RN) are presented next.

A randomized control trial in the US that examined the impact of RN case management on BP, HgA1C, lipids, DM, and emotional distress among the subjects (n=332) who received care in primary care settings during a six month period (Gabbay et al., 2006). The RN case management interventions (e.g. an individualized care plan, BP and DM self- management education, telephone follow-up, administering a Problem Areas in Diabetes Questionnaire (PAD), and referrals to a certified DM nurse educator) significantly improved mean SBP (137 mmHg; \pm 19 to 129 mmHg; \pm 18) and DBP (77 \pm 10 mmHg to 72 \pm 9 mmHg) ($p < 0.001$). The subjects in the intervention group also received lower diabetes-related emotional distress scores (23 to 10) on the PAD.

Rudd et al. (2004) conducted a randomized control trial to determine whether a telephone-mediated nurse management program effectively managed BP among a sample of hypertensive adult outpatients (n=150). In addition to the standard care, the intervention group received instructions on the correct use of the automated BP device, confirmation of their ability to operate the BP device, tips for enhancing medication

adherence and indications of side effects, telephone follow-up, and the option of engaging in unrestricted telephone communications during regular office hours. After six months, the findings indicate that the subjects in the intervention group had significantly lower BP levels compared to the subjects in the control group; a reduction in SBP, OR=14.2 mmHg, 95% CI 18.1 – 10.0 versus OR =5.7mmHg, 95% CI 10.2 to 1.3; and a reduction in DBP OR =6.5mmHg, 95% CI 8.8 to 4.1 versus OR =3.4mmHg, 95% CI 5.3 to 1.9.

Baig et al., (2010) conducted a randomized study to determine whether differences in decreased BP levels existed between subjects who received a standard faith-community nursing (FCN) intervention compared to those who received a telephone assisted physician. Faith-community nursing (formerly known as parish nursing) is an independent practice of nursing that emerged in the US in the 1980s (Monay, Mangione, Sorell-Thompson, & Bait, 2010). The primary role of faith based community nursing includes: (1) health educator; (2) personal health counselor; (3) referral agent; (4) health advocate; (5) facilitator of volunteers; (6) developer of support groups; and (7) integrator of faith and health (e.g. promoter of activities that promote the understanding of the relationship between faith and health) (Interfaith Health & Wellness Association, 2000). Subjects were recruited at a church sponsored health fair (n=100); 50 subjects (n=50) were in each group; and the study period was four months. The FCN intervention group included 60% Hispanics, 24% were Asian/Pacific Islanders, 8% Caucasians, 6% African Americans, and 2% other. In the telephone physician-assisted group, 64% were Hispanic, 20% Asian/Pacific Islander, 14% Caucasian, and 2% African American. The authors report the faith oriented interventions (Biblical scripture and prayer) were not part

of the FCN intervention. Improvement in self-management of BP was the aim of the study. A higher proportion of patients in the telephone assisted group had appointments with a physician closer to the onset of the study, they had more changes in antihypertensive medications prescribed, made appointments with physicians without having to be referred by the FCN, and the attrition rate was nearly 10% lower in this group. There was a statistically significant difference between the two groups. The subjects who received the FCN intervention had a decrease in SBP of 7 mmHg (± 15.0) compared to a 14 mmHg (± 15.0) decrease in SBP in the subjects who received the telephone assisted physician appointment; a difference of 7 mmHg ($p > 0.04$).

The implications of the findings in these three studies are mixed. The subjects in the first two studies received community oriented care from clinicians in primary care settings. The subjects in the two study whose interventions were clinical versus community-oriented had better outcomes (e.g. lower BP). It is of note that in the current managed-health care climate, the primary strategy for cost containment is restricting and limiting access to health care. The first two studies that took place in general practice/primary care settings were atypical and would be costly to implement, because they are not congruent with today's health care climate of cost containment. The study with FCN community-based interventions did not effectively reduce BP levels compared to the telephone assisted physician group. Based on these findings, the nurse's role in effective BP control is evolving and warrants further study.

Policies and Interventions. Policies include guidelines and procedures, health-related strategies, and budgeted financial resources that assist in providing health interventions at the national, state, and local levels. Interventions refer to a definite

course or method of action selected from among alternatives and in light of given conditions to guide and determine present and future decisions (CDC, 2004).

The AHA, NHBPEP, American Society of Hypertension, International Society of Hypertension in Blacks (ISHIB), and the Healthy States Initiatives Program of Centers for Disease Prevention and Control are leading organizations in the US that influence policies related to hypertension, stroke, and CVD. The collective vision and aim of these organizations are to increase awareness, prevention, treatment and control of HBP by conducting research, setting practice guidelines and standards, and by publishing evidence-based health information that targets researchers, legislators, public health departments, patients, health providers, and general consumers.

Even though published evidence-based guidelines are consistent among the various organizations, providers demonstrate marked differences with regards to implementing established BP guidelines in clinical practice. The JNC-7 Report, 2004 states that primary care physicians have been known not to begin recommended antihypertensive therapy in older adults who have sustained SBP between 140mmHg and 150 mmHg. One national survey indicates that over 30% of physicians are less likely to diagnose elevated SBP when the patient's DBP is consistently within normal limits (Hyman & Pavlik, 2000). "Most physicians have been taught that DBP is more important to control than the SBP" (JNC-7, 2004, p. 15). This bias often reflects whether or not physicians treat the patient's SBP. Consequently, ineffective SBP control is partially attributed to physician attitudes (JNC-7).

The ISHIB is a subgroup of the American Society of Hypertension established in 1986. The mission of the Society is to improve the health and life expectancy of ethnic

minorities and eliminate racial and ethnic health disparities in cardiovascular disease through professional and public education, targeted clinical research, and facilitation of the delivery of higher quality cardiovascular health care (ISHIB, 2011). In order to address the escalating morbidity and mortality rates of HBP, the organization published a consensus statement that outlined the importance of physicians conducting a global risk assessment to identify the cluster of CV –related risk factors most common among African American adults (Ferdinand, 2005). This cluster of risk factors includes cigarette smoking, elevated BP (whether treated or untreated), elevated lipids, diabetes, and advancing age. In addition, components of the patient’s history that may affect his or her ability to sustain lifestyle modifications and adherence to pharmacotherapy were included. Patients’ histories associated with psychiatric illness, an environmental assessment, socioeconomic factors, recognizing the importance of over-the-counter medications (including supplements and herbal products) also were in the consensus report (Ferdinand).

The DHM was used in this section as a framework to show that there are constellations of multidimensional risk factors that are associated with HBP, which makes treatment and effective HBP control challenging and complex. A brief overview of health disparities related to HBP and CVD in Black African Americans is presented in the next section.

Health Disparities in HBP

’Health disparity’ is a concept that refers to the disproportionate adverse health conditions among some groups in the US. This includes “groups who have persistently experienced social disadvantage or discrimination and groups who systematically have

experienced worse health or greater health risk than more advantaged social groups” (Braveman, 2006, p. 167). The most prevalent health disparities encompass a broad spectrum of disease types that include endocrine diseases, arthritic diseases, malignancies, infectious diseases, and vascular diseases (IOM, 2003). The largest and most relevant disparities are those associated with heart disease (HD), stroke, cancer, diabetes, mental illness, and HIV/AIDS (IOM).

Cardiovascular-related health disparities are reflected in the prevalence rates of measured and self-reported CVD risk factors, hospitalizations related to major CV events, quality of life indicators, and overall mortality rates (Mensah & Dunbar, 2006). Divergent pathways to disparities in health are known to exist. Many of the causal pathways of health disparities are embedded in physical and social environments. This includes geographic, economic, political, psychosocial, and sociocultural factors often historically based (Williams & Jackson, 2005).

During the last half of the 20th century, more research studies have begun to focus on the causal relationships between risk factors of the physical environment, social environment, and population health since personal risk factors continued to explain no more than 30% of the variation in disease occurrence (Syme, 1996). Blacks in the US are 1.5 times more likely to have a cluster of primary and secondary risk factors associated with CHD compared to their white counterparts (Clark & Emerole, 1995). In addition to HBP, CVD and CHD, risk factor clusters among this high risk population often includes dyslipidemia, hyperglycemia, insulin resistance, overweight/visceral adiposity, diabetes, high sodium/potassium consumption ratios, excessive alcohol consumption, ineffective stress management, sedentary lifestyle, and smoking (Haider, Larson, Franklin, & Levy, 2003; Levy et al., 1999; Marang-van de Mheen & Gunning-Schepers, 1998; Zimmet et

al., 2005). Reducing and effectively managing this constellation of risk factors may reduce the morbidity and mortality rates associated with HBP, CVD, and subsequent injury to target organs (Castaldo et al., 2005).

History of HBP Disparities

William Edmund Burghardt (W.E.B.) Du Bois, the first Black American to graduate from Harvard University, was a sociologist and among the first researchers to bring national attention to the disparate health status of Black Americans compared to their White counterparts (Du Bois, 1906). In 1906, health data pertaining to the ‘Negro’ was reported by DuBois in the publication *The Health and Physique of the Negro American*. The publication was a sociological study that compared the crude death rates of ‘Negroes’ in northern cities with the crude death rates of ‘Negroes’ in southern cities. This report also included the excess death rate of ‘Negroes’, infant mortality rates, and health disparities by race and geographic region (Du Bois, 1906).

Historically, CVD has disproportionately affected Black Americans of African descent. Adams (1932) was one of the first research studies in the US to examine the disparate HBP prevalence rates between White and Black adult male employees. The study was conducted between 1920 and 1930. Subjects were 18 to 65 years old (n=14,000), and employed in a large manufacturing company in a southern US city. The purpose of this cohort study was to examine the association between specific health indicators (e.g. HBP, albumin levels, kidney disease, and enteric disorders) and the number of work days lost per year. The study findings indicated that mean BP (based on an average of 2 BP measurements) for White males was 121/81mmHg compared to 128/85 mmHg for Black men. There was a 7 mmHg higher average SBP and 4 mmHg

higher DBP in the Black subjects compared to their White counterpart. Black employees also had higher rates of albuminuria and more workdays lost per year than White employees. White male subjects had a greater frequency of enteric disorders.

Current HBP Disparities

Blacks in the US exhibit a large excess death rate compared to White Americans for nearly all causes of death, and deaths attributed to CVD rank highest (Dressler, Oths & Gravlee, 2005). Excess death rate is “an index used in health disparities research to estimate the number of observed deaths calculated for a population subgroup (e.g. Black Americans) using data from another population subgroup (e.g. White Americans)” (Dressler et al., p. 233). The excess death rate among Blacks is largely attributed to hypertension-related CVD. Black Americans represent 25% of the nearly 60 million cases of hypertension in the US although they constitute only 13% of the total population (Hajjar & Kotchen, 2003; Martins & Norris, 2004).

In 2003, hypertension was listed as a primary or contributing cause of over 11% (277,000) of all US deaths (AHA, 2006). Compared to Whites, Blacks living in the US develop hypertension at earlier ages, their average BP was much higher, and they are known to respond differently to antihypertensive drug therapy (AHA, 2006; Hajjar & Kotchen, 2003). Black Americans have the highest rates of hypertension and higher rates of mortality associated with poorly controlled BP when compared to other ethnic/racial groups (Brownley et al., 1999). High BP is the most preventable cause of more than 65,000 deaths among Black in America each year (AMA, 1998; Heart Disease and Stroke Prevention Program, 2006)

Eliminating HBP Disparities

Eliminating health disparities is a public health priority identified by the IOM, NIH, and the USDHHS' *Healthy People 2020* initiative (Kilbourne, Switzer, Hyman, Crowley-Matoka, & Fine, 2006; Healthy People, 2010). The disparities related to hypertension and CVD have become major focus areas in advancing the national health disparities research agenda (Kilbourne et al.). "In Healthy People 2020, that goal was expanded even further: to achieve health equity, eliminate disparities, and improve the health of all groups" (Healthy People 2020, 2011, p. 1).

A comprehensive approach that includes the implementation of primary, secondary, and tertiary prevention strategies is necessary for reducing the high prevalence rates of HBP and the health disparities associated with HBP and CVD. A discussion of BP awareness and HBP treatment and control as they relate to primary, secondary, and tertiary prevention are presented in the following section. Primary prevention includes the efforts that are taken to prevent diseases such as HBP from occurring. Primary prevention strategies also reduce the incidence and prevalence rates of a disease (CDC, 2004). Secondary prevention refers to screening for the disease and early treatment if disease is diagnosed. Tertiary prevention involves treating the disease and preventing it from causing further harm (CDC).

BP Management and Control

Thirty percent of adults with hypertension are unaware of having high BP (Chobanian et al., 2003). Hypertension that is undiagnosed and elevated BP that is inadequately treated place an enormous burden on those with hypertension, particularly Black Americans whose morbidity and mortality rates are higher than other racial/ethnic

groups (Douglas et al., 2003). According to the NHANES, 1999-2000, 60% of White Americans with hypertension received treatment to control BP and 55.6 % had their BP under control. Sixty-three percent of the Black Americans in the study were receiving treatment for hypertension. However, only 44.6% had their BP under control. See Figure 2.5. The difference in control rates for Whites and Blacks who received treatment and had their BP under control were 4.5% and 18.4%, respectively (Chobanian et al). The reasons for these differences remain unclear. Further discussion of BP awareness and HBP treatment and control within the context of primary, secondary, and tertiary prevention will follow in the subsequent sections.

Primary Prevention

“Prevention strategies that are applied early in life provide the greatest long-term potential for preventing HBP” (NHLBI, 2002, p. 4). Developing knowledge and awareness of the seriousness of HBP; the susceptibility of developing HBP; the biological, environmental, and personal/behavioral risk factors that are associated with HBP; and the need for frequent BP monitoring are instrumental in preventing the onset of this disease. Since HBP can develop during childhood, the sooner individuals and families become knowledgeable about these predisposing risk factors the better.

Secondary Prevention

Early diagnosis of HBP, performing a global assessment of risks for CVD, and early treatment are instrumental to achieving optimal clinical outcomes. An accurate BP measurement is crucial at all levels of prevention (e.g. primary, secondary, and tertiary). Studies have shown the tendency for BP to be lower and less accurate when BP measurements are performed by physicians compared to nurses and other trained

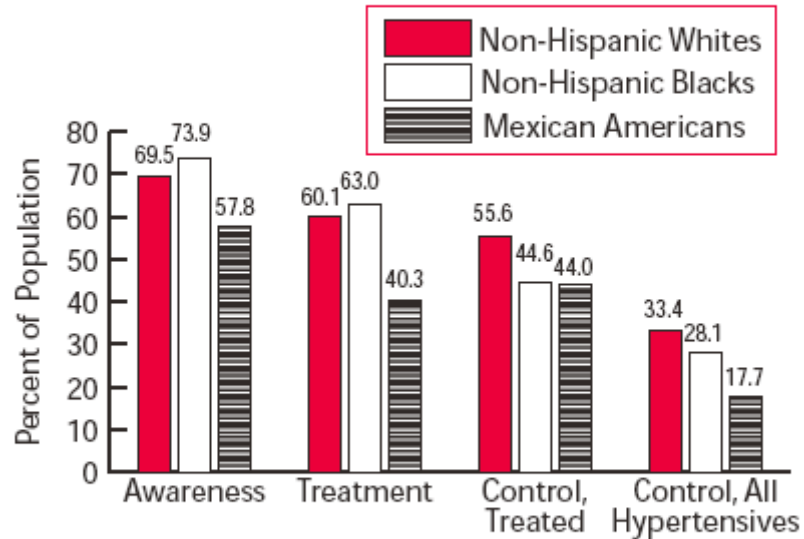
personnel (Wolf-Maier et al., 2004). In the NHANES, a major US study to determine BP prevalence rates, BP is measured by physicians.

Over 20% of outpatients have inaccurate BP measurements because of an alert reaction (acute stress episode) and white coat syndrome (defined as an arbitrary elevation in BP during a clinic or office visit) (Pickering, 2008). Patients are known to have inaccurate BP measurements because of an improperly fitting BP cuff. Concerns have been expressed by health practitioners regarding the accuracy and effectiveness of ambulatory automated BP measurement devices (compared to the mercury sphygmomanometer devices) because of the variances in sensitivity and specificity among the various automated BP devices.

When HBP is first diagnosed, behavioral interventions should be included in the treatment plan. Behavioral interventions with documented efficacy include weight loss, dietary sodium reduction, increased physical activity, low to moderation consumption of alcohol, modification of whole diets, and potassium supplementation (NHLBI, 2002). Recommended behavioral interventions that have less proven efficacy include calcium, fish oil/omega-3 fatty acids, and herbal dietary supplements.

Figure 2.5.

Extent of Awareness, Treatment and Control of High Blood Pressure by Race/Ethnicity
NHANES: 1999–2000



Source: Trends in prevalence, awareness, treatment, and control of hypertension in the United States, 1988–2000. JAMA. 2003;290:199–206.

Tertiary Prevention

Poorly controlled BP is the leading cause of early disability and mortality associated with cerebrovascular disease (stroke), ischemic HD, cardiac failure, and renal failure (AMA, 1998; WHO/ISH, 2003). Uncontrolled (and poorly controlled) BP signifies BP that is inadequately managed or treated; rather than BP that is resistant to treatment (Wang & Vasan, 2005).

Estimates have shown that inadequate BP control in the US has resulted in 39,702 cardiovascular events; 8,734 annual deaths, and over \$900 million in direct medical expenditures (Flack, et al., 2002; Francischetti & Genelhu, 2006). The average cost for emergency department visits for uncontrolled hypertension in 2004 were as high as \$1,543 per visit (Bender, Fong, Heitz & Bisognano, 2006). There would be an estimated

9 % reduction in mortality due to CHD, a 14 % overall reduction in mortality due to stroke, and a 7 % reduction in all-cause mortality if there was at least a 5 mmHg mean reduction in systolic BP within the US population (Whelton et al., 2002). See Figure 2.6.

Only 30% of the adults in the US are aware of their HBP status (Burt et al., 1995). The remaining 70% of those with elevated BP are unaware of their HBP, and this suggests that their BP is poorly controlled. Approximately 58% of the people with known BP levels in the hypertensive range are receiving treatment (Burt et al.). According to NHANES III (1988-1991), only 56% of individuals being treated for HBP reached a target BP goal <140/90 mmHg. Overall, adult females are more likely to have high BP that is treated and controlled compared to adult males (Luepker et al, 1999). How quickly BP control should be achieved should depend on the following: (1) severity of elevated levels (e.g. prehypertension, stage I, or stage II); (2) absolute or global risk for CVD (e.g. obesity, high LDL, low HDL, glucose intolerance, LVH, family history, age, gender, and ethnicity); and (3) the difference between current BP levels and desired BP goal (e.g. < 140/90 mmHg for individuals without multiple CV risk factors and < 135/85 for individuals with DM) (Luepker et al.).

The goal for individuals with prehypertension and no compelling indications (e.g. glucose intolerance and history of cardiac events) is to lower BP to optimal levels (e.g. \leq 120/80mmHg) with behavioral and lifestyle modifications. The treatment goal for individuals with hypertension and no other compelling condition is <140/90 mmHg. The JNC suggests that people with stage I and stage II hypertension begin antihypertensive drug therapy (JNC-7, 2004). Several factors that influence effective HBP treatment and

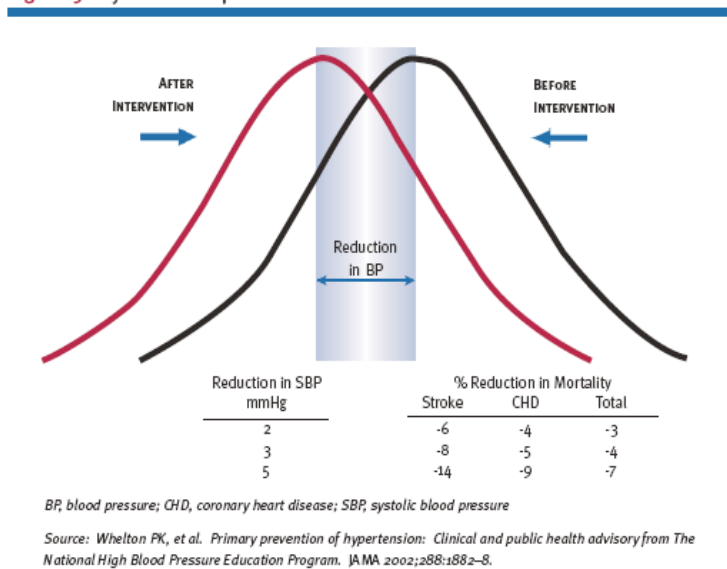
control include: patient and provider relationships, assessment to treat, and antihypertensive drug therapy.

Patient and Provider Relationship. Creating a therapeutic alliance between provider and patient is crucial to the successful treatment of hypertension (Douglas et al., 2003). A favorable patient-provider relationship can make a significant difference in alleviating health disparities associated with HBP. The medical literature regarding the treatment of hypertension and other chronic illnesses highlights the responsibility of the patient with regards to adhering to the BP treatment plan and the responsibility of health providers' adhering to recommended practice guidelines. Health providers and patients share the responsibility of establishing objectives and goals pertaining to effective BP management (Douglas et al.).

Assessment to Treat. Determining the type of antihypertensive medication that is needed should be among the first considerations for achieving adequate BP control in addition to jointly (patient and provider) establishing evidence-based strategies with regards to behavioral risk factor management. The severity of HBP and the individual's global risk for a cardiac event and possible target organ damage are criteria that are most commonly used to determine the types of antihypertensive medication and the dosages that should be prescribed. An individualized global CVD risk assessment may include: (1) self-assigned ethnicity; 2) sex; (3) age; (4) body mass index; (5) SBP; (6) ratio of total serum cholesterol/high density lipoprotein cholesterol; (7) smoking status; (8) family history of coronary HD in first degree relative under 60 years; and (9) a measure of individual SES (income and education) or geographic community poverty level score

based on US Census data (Hippisley-Cox, Coupland, Vinogradova, Robson & Brindle, 2008).

Figure 2.6 Systolic Blood Pressure Distributions



JAMA 2002, 288, 1332

Antihypertensive Drug Therapy. The classifications of medications that are commonly used to treat HBP included the following: alpha blockers; angiotensin-converting enzyme (ACE) inhibitors; angiotensin receptor blockers (ARBs); beta blockers; calcium channel blockers; central alpha agonists; diuretics; renin inhibitors,; and vasodilators (NIH, 2010). Recommendations based on the results from the seminal research study, Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT), suggest the following (NHBL, 2010): (1) antihypertensive drug treatment should begin with a diuretic; (2) add a diuretic if other antihypertensive medications are not controlling BP; (3) when beta blockers are appropriate, include them at the beginning of treatment, especially for patients < 60 years old who do not have

diabetes or PAD; (4) consider giving a calcium channel blocker or ACE inhibitor if a diuretic is contraindicated; (5) a calcium channel blocker and a diuretic may be warranted when angina is an accompanying symptom; and (6) an alpha-adrenergic blocker should be considered to control BP if more than one drug is being used to treat older men who are being treated for benign prostatic hyperplasia.

Conclusion

The devastating effects that HBP has on human health and wellbeing and the tremendous economic burden that it imposes on society have been described in this review of the literature. Hypertension is the leading cause of cardiovascular disease (CVD) such as stroke, CHD, and end state renal disease; all are leading causes of death in the US (Hajjar & Kotchen, 2003). Black Americans of African descent are disproportionately affected by hypertension compared to other ethnic groups (AHA, 2006; Burt et al., 1995; Roger et al., 2011). The underlying cause of cardiovascular death in Black Americans is attributed to hypertension (Dressler, 1996).

Various biological, environmental, and personal/behavioral risk factors, and the interrelationships between these risk factors, are being explored across disciplines to identify the causes of HBP. A major aim in health disparities research is to advance the understanding of why Black African Americans experience earlier onset of HBP and higher average BP levels, have diverse responses to pharmacological interventions, and experience higher overall morbidity and mortality rates compared to other populations and groups.

The aim of this study is to assess HBP frequencies and the relationship between BP and BP awareness; eating habits and exercise self-confidence, lifestyle behaviors, SC

(social trust, inter-racial trust, trust in government, political participation, civic leadership, informal social ties, informal social ties and engagement, volunteering, and faith-based engagement); social support; chronic disease management self-confidence; depression; and antihypertensive medication adherence self-efficacy. The data collection instruments that are used in this study to examine the relationship between these risk factors and BP are described in Chapter 4. Social capital and SC theory that was used to develop the conceptual framework of the study are described next in Chapter, 3.

Chapter 3

Social Capital Theory as the Conceptual Framework for this Study

Introduction

Social capital is a dynamic characteristic of social networks and a concept that has been engaged in various disciplines including sociology, economics, political science, education, social epidemiology, community psychology, and public health (Claridge, 2004; Portes, 1998). There are multiple definitions and diverse views in the academic literature on SC (Claridge, 2004). However, there is collective agreement among the disciplines that the concept is in need of further conceptual development (Hsieh, 2008; Claridge, 2004; Portes, 1998) because the SC concept lacks a coherent methodological framework (Adam & Roncevic, 2003). The purpose of this chapter is to discuss the following: (1) the early development of SC; (2) central premise and properties of SC theory; (2) definitions of the SC concept; (3) the SC conceptual framework (4) the different types of SC; and (5) the relationship between SC, human health, and wellbeing. Social capital theory served as the conceptual framework in this study. The SC concept is often used interchangeably with the terms social networks and social cohesion in some of the SC literature (Ching-Hsing, 2008). Social cohesion is defined as the level of closeness, connectedness, and solidarity that exists among group members and organizations (Ching-Hsing; Kawachi & Berkman, 2000). Social cohesion and social connectedness are interchangeable terms that are also synonymous with the concept 'sense of community'. McMillan and Chavis (1986) define 'sense of community' as a phenomenon whereby group members experience feelings of belonging and a belief that the individual and collective needs of the group will be met by reciprocal commitment among group members and commitment to the group. Social capital and social cohesion are two distinct terms that are integral properties of social networks. A causal

relationship between the two terms is present whereby social cohesion is considered to be a precursor or antecedent of SC (Carpiano, 2006). Consequently, social cohesion will not be used as an interchangeable surrogate term with the SC concept in this document.

Early Development of Social Capital

Early empirical investigations of the SC construct dates back to the 18th and 19th centuries. Three major contributors to the early development of the concept are discussed in this section. Adam Smith, a Scottish philosopher, found a positive relationship between social harmony (a component of SC) and economic development (Halpern, 2005). Alexis de Tocqueville was a French diplomat who studied the characteristics of formal and informal social structures in the US (e.g. the judicial and financial systems, religion, civic and political participation, racism, and class differences) (American Enterprise Institute for Public Policy Research [APPR], 2011). He determined that certain properties within social structures were building blocks for a free and democratic society. Emile Durkheim was a French sociologist known for his empirical investigation of inherent characteristics found in communities, neighborhoods, and other social environments that influence health behaviors such as suicide. According to Durkheim, there are intangible social properties (that he termed *social facts*) that are characteristic of neighborhood communities, external to the person, and serve as a coercive power that is independent of the individual's will. These social facts significantly influence personal health behaviors (Turner, Beeghley, & Powers, 1998; Halpern, 2005). The intangible social properties identified by Smith, de Tocqueville, and Durkheim paved the way for empirical investigation of the SC concept in US society.

Premise and Tenets of Social Capital

Social capital is a very broad multidimensional concept that has relational, material, and sociopolitical qualities (Ching-Hsing, 2008). It consists of the relationships between members of a social group. Individuals and members of the group have the ability to access resources by virtue of being a member of that group. Group members are also able to gain social and political influence, prestige, and social status by belonging to social groups. The defining feature and distinguishing property of SC is that it specifically pertains to the qualities and characteristics that result from the relationships between members (actors/entities) of a social group. Social capital is not a quality or the sole property of individuals (e.g. human capital) or the sole property of other entities such as that which pertains to technological and industrial development and economic capital. The SC concept has been the focus of most of the social theory research during the past 15 to 20 years (Claridge, 2004; Veenstra, 2000).

The major premise of SC is that “social networks have value” (Saguaro Seminar 2000, p. 1). The core values of SC and the innate features of social networks include social ties (e.g. who knows whom and the character of those relationships) (Sander & Lowney, 2005); reciprocal trust among members, which is considered the antecedents to group norms and sanctions; actual and potential access to tangible resources (e.g. information, monetary/economic resources, health and social services); and actual and potential access to intangible resources and benefits such as social support, social influence, and social privilege. A major underpinning of SC is that it enables group members to develop attributes that can be used to influence and adapt to man-made environments and to the changing world around them (Putnam, 2000).

The collective value of social networks and SC (e.g. who people know and how well they know them) is associated with how likely members of the network will do things for each other (Putnam, 2000; Saguaro Seminar, 2008). *'It is not what you know, but who you know'* is an aphorism that is often used to emphasize the major underpinning of SC (Putnam, 2000; Woolcock, 2005). This aphorism implies that individuals who have inside contacts and know the 'right people' have greater advantages such as gaining membership to exclusive clubs or greater chances of acquiring highly competitive business contracts because they have 'friends in high places' (Chazdon, Horntvedt, & Laeger-Hagemeister, 2008). Social capital also has been characterized as the 'glue' that holds a community and society together (Ching-Hsing, 2008).

Social capital is a property embedded in social groups and networks; it is a valuable commodity accessible to members of social groups; and higher levels of SC produce greater benefits for the group members, families, communities, and society by providing access to information and knowledge in addition to economic and material resources such as health and social services. These are the core tenets of SC (Putnam, 2000; Halpern, 2005). Building SC at the individual, family and community levels has been identified as a strategy for addressing economic and health disparities. Research also has shown that SC improves SES at the individual, community, regional, and national levels (APPR, 2011). Furthermore, SC can benefit individuals external to the network as well as group members. For example, people who know an individual who is a member of a Weight Watchers Program or a hypertension support group may benefit from the health information and knowledge that is acquired by a member of one of the social groups.

Definitions of Social Capital

Social capital exists wherever there are people who share a feeling or sense of identification and belonging (Claridge, 2004). It can be operationalized at the micro (individual), meso (family or group), and macro (community, regional, and national) levels of analysis (Claridge). Social capital has multiple properties and qualities. No one-dimensional measure of SC exists (Putnam, 2000).

Social capital theory development had its origin in the field of sociology. The concept has undergone major development in sociology, economics, political science, social epidemiology, and public health. Pierre Bourdieu, James S. Coleman, and Robert D. Putnam are considered “three fathers of the concept” (Adam & Roncevic, 2003, p. 157). Their respective contributions to the development of the SC concept and its use in the US are discussed next.

Bourdieu (1986) conducted empirical investigations of class relationships in France; particularly the manner in which they were instrumental to reinforcing socioeconomic inequities (Pomagaloska et al., 2009). Bourdieu defines SC as “the aggregate of the actual or potential resources that are accrued by an individual or a group by virtue of possessing a durable social network of more or less institutionalized relationships of mutual acquaintance or recognition” (p. 243). According to Portes (1998), whose perspective of SC aligns with Bourdieu, the important feature of SC is that it provides individuals with the capacity to access scarce resources by virtue of their membership in social groups and broader social structures.

The major premise of Bourdieu’s theory is that SC is a resource that facilitates personal access to economic capital (e.g. monetary rewards and tangible resources).

Bourdieu also proposes that SC is based on social position that results in the unequal distribution of money, education, and social influence (Pomagaloska et al., 2009).

Consequently, SC creates opportunities for exclusive advantages among members of the social network (Weininger, 2006). The roles of SC with regards to the SES inequities, power, and social influence are central to Bourdieu's thesis (Pomagaloska et al., 2009). The influence of SES and social position on health is discussed next.

Social position and class (SES) plays a significant role as a causal risk factor for CHD. Evidence that CHD is not limited to the consequences of poverty but is associated with various levels of social class has been supported in the findings of the Whitehall II study by Sir Michael Marmot in Great Britain (Marmot & Brunner, 2005). One of the aims of the cohort study was to examine the relationship between CHD in men and women who were between the ages of 35 to 55 years old and worked as civil servants in 20 London offices between 1985 and 1988. There were 3,413 women and 6,895 men who participated in the study (n=10308). There were wide differences in salaries among the subjects who had different job classifications that included clerical and office support staff, middle-ranking executives, and senior administrators. Job strain, job demands, and low decision latitude are factors known to occur more frequently among lower job classifications, and they have been linked to stress-related illnesses including CHD and CVD. Prospective measures were made at five years intervals over a 20 year period. The findings of the study indicated that people in lower job classifications experienced more job strain, job demands, and low decision latitude (Marmot & Brunner). Consequently, individuals in lower job classifications were at greater risk for CHD than individuals who worked in higher job classifications.

Bourdieu also believed that it is important for individuals to develop relationships with various institutions in order to access resources that will enhance their SES. Being part of a social network that includes institutions and organizations enables individuals to gain access to resources that are important to health (Pomagaloska et al., 2009). It is of note that social networks that include institutions and organizations are not created naturally or by chance. They must be deliberately constructed by strategies that link individuals and groups to social networks at the institutional level where resources are most available (Portes, 1998). According to Bourdieu (1986), operationalization of the SC concept is located at the individual or micro level of analysis.

Coleman (1988) defines SC by its function and emphasizes that the concept is a variety of entities, rather than a single entity. These different entities have two characteristics in common (Coleman): (1) all consist of some aspect of social structure, and (2) they facilitate certain actions of individuals who are within the structure. The actions of individuals are based on “obligations, expectations and trustworthiness among and between group members; information channels by which knowledge and social influence can be acquired; and norms and effective sanctions, whereby, people forgo self-interest and act in the interest of the collective” (p. 104). Social norms, sanctions, and role modeling are properties of SC and unique features of social structures that promote and facilitate actions by its members (Carpiano, 2006; Coleman, 1988). The major emphasis by Coleman centers on the reciprocal influences that individuals and groups have with regards to shaping group norms and sanctions, and the collective behavioral characteristics of the group. The operationalization of SC according to Coleman is located at the community, group or meso level of analysis.

The importance of SC, according to Putnam (2000), is associated with strong social cohesion among individuals in social networks based on norms of reciprocity and trust. As discussed earlier in the introduction section, social cohesion is established when group members experience feelings of belonging and a belief that the individual and collective needs of the group will be met by reciprocal commitment among group members and commitment to the group. Consequently, social cohesion serves as a precursor and foundation on which SC develops and becomes available to group members.

Putnam describes the US as a nation that evolved into a collective of joiners, helpers, and good citizens with a common goal of building a sense of community. The relational and civic/political features of SC are the focus of Putnam's research. According to Putnam (2000), the US began to face a civic crisis by the end of the 20th century as a result of choosing to live alone and play alone. Further, “Americans fail to see the connection between political participation and the nation’s wellbeing and no obvious connection between social events (e.g. dinner parties) and the health of American society and democracy” (p.3). It is of note that “a society of virtuous and isolated individuals is not necessarily rich in SC” (p. 19).

Social capital is considered a valuable asset that can affect all aspects of life at the personal and community levels (Chazdon et al., 2008). Communities with more diverse sources of SC among the individual and institutional members of the social network are less vulnerable because “connections within communities help people link to resources so that personal and community-level problems can be resolved more easily” (p. 2). An explanation that has been given for individuals and families continuing to live in poverty

is that they lack access to and, consequently, connections with individuals and institutions that can help them gain additional education and employment opportunities (Chazdon et al., 1999). The operationalization of SC according to Putnam is located at the group (meso) and societal (macro) levels of analysis.

The narrative Putnam (2000) provides a comprehensive overview of the importance of SC to society:

Research has begun to show how powerfully SC, or its absence, affects the wellbeing of individuals, organizations, and nations. Economic studies demonstrate that SC makes workers more productive, firms more competitive, and nations more prosperous. Psychological research indicates that abundant SC makes individuals less prone to depression and more inclined to help others. Epidemiological reports show that SC decreases the rate of suicide, colds, heart attacks, strokes, and cancer, and improves individuals' ability to fight or recover from illnesses once they have been struck with illness. Sociology experiments suggest that SC reduces crime, juvenile delinquency, teenage pregnancy, child abuse, welfare dependency, and drug abuse, and increases student test scores. From political science, we know that extensive SC makes government agencies more responsive, efficient, and innovative. SC makes navigating life a whole lot easier: our friends and family members cheer us up when we're down, bring us chicken soup when we're sick, offer job leads when we're unemployed, baby-sit our kids when we're away, join us at the movies when we're bored, give us loans when we're broke, and remember our birthdays when even we forget them (p. 4).

Social Capital is considered vital to the overall wellbeing of society because it involves strengthening social ties and building a sense of community, increasing civic participation and political engagement, and volunteering. It serves as a mechanism for promoting health, improving education, and it promoting economic growth and development at the national level. The SC concept has been further developed in the US by the Saguaro Seminar: Civic Engagement in America, at the John F. Kennedy School of Government, Harvard University in the 1990s. The word 'saguaro' was selected for

the seminar because of its symbolic meaning. The saguaro is a cactus indigenous to the Sonoran Desert in the southwest region of the US (Sagauo, 2000). This plant produces edible fruit and has been celebrated at Native American festivals, used to feed live-stock; it has an elaborate subterranean root system, and provides desperately needed shade from the sun for animals that inhabit one of the more arid regions of the US. Social capital is considered analogous to the saguaro cactus because it is not readily observable, and it is extensively rooted in all social groups and social networks. It has properties and values that nourish and make for a civil and compassionate society. Social capital also offers protective factors in the form of emotional and social support for coping with deficits and accessing information, education, employment, and material goods that can help people ‘get ahead’. Although valued by Native Americans, this plant was historically undervalued by Euro-American society until the last half of the 20th century when it was discovered that the saguaro cactus can be used to predict the health of the ecosystem of the southwestern region of the US (SCBT).

Social capital is a characteristic of individuals that is often conceptualized as a community resource (Pilkington, 2002). It “encompasses all of the economic, social, collective, and cultural resources to which individuals and communities have access” (Pilkington). The conceptual underpinning of SC by Bourdieu and Putnam are used to delineate the distinction between the three types of SC. The contributions by Bourdieu and Putnam were also used to guide the development of the SC conceptual framework in this study. The three types of SC that are discussed at the beginning of the following section include

bonding, bridging, and linking SC. This is followed by a description of the SC conceptual framework.

Social Capital Conceptual Framework

Social capital is a very broad and multidimensional concept. Putnam (2000) and the Saguaro Seminar on Civic Engagement in America at the John F Kennedy School of Government, Harvard University have identified more than 100 ways for people to develop social connections, build trusting relationships, and establish a diverse and broad base of SC (Saguaro Seminar, 2000). See Appendix A. Many of these multiple strategies for developing social connections and building trust have been conceptualized into various dimensions of SC. These strategies also were operationalized by Putnam (2000) and the Saguaro Seminar (2000) and included among the indices (dimensions) for measuring and assessing SC in the 2000 Social Capital Community Benchmark Survey (Saguaro, 2000). Nine of the dimensions of SC established by Putnam (2000) and the Saguaro Seminar (2000) and used in the Social Capital Community Benchmark Survey-short form (SCSF) were used to develop the SC conceptual framework for this study. Further, the SCSF was used in this study to assess the relationships between SC and BP.

The dimensions of SC theory used to develop the conceptual framework in this study include the following: (1) social trust – trust in others such as neighbors, co-workers, police, and local shop clerks ; (2) interracial trust – trust between Whites, Blacks, and Latinos; (3) trust in government –local and federal; (4) political participation – interest in politics, national affairs, registered voter, voting, and attending political rallies; (5) civic participation – attending public meetings, discussing school or town affairs, affiliation and involvement with associations/organizations; (6) informal social

ties – frequency of interactions with friends/community members; (7) informal social ties and engagement – frequency of interactions with friends/community members plus reciprocal visits with a community leader; (8) volunteering – donating time/money/blood; and (9) faith-based engagement – membership and attendance. These dimensions of SC theory were also selected, as appearing on face validity to be relevant to community health, and used in the conceptual framework of this study. Their conceptual definitions are presented in Figure 3.1. The survey questions that comprise each SC dimension are presented in Table 3.1. Descriptions of the dimensions of SC composite indices are presented next. Further discussion of internal consistency reliability used in statistical analysis to determine the composite indices is presented in Chapter 4.

Social Trust Composite Index

This index measures the degree to which an individual trusts various people in the community and generalized trust in institutions (neighbors, people who work where you shop, ethnic groups, police, and government). Social trust is important for promoting social interactions and getting things accomplished (SCCB, 2000). Social trust is a component of the bonding, bridging, and linking SC composite indices.

Interracial Trust Composite Index

This index measures the extent to which an individual trusts different social and ethnic groups. It is considered a proxy for interracial relations in a community (SCCB). This dimension of SC is a component of the bridging SC composite index.

Table 3.1 Composite Indices for SC Dimensions & Corresponding Survey Question

SC Dimensions/Indices: Social Trust (6 questions); Inter-racial Trust (3 questions); Trust in Government (2 questions); Political participation (2 questions); Civic Participation (4 questions); Informal Social Ties (3 questions); Informal Social Ties and Engagement (4 questions); Volunteerism (2 questions); and Faith-based Engagement (3 questions)

1. **Social Trust:** How much you trust the groups of people listed below
 - (2A) People in your neighborhood ^{BR}.
 - (2B) How about the police in your local community ^{LK}
 - (2C) People who work in the stores where you shop. ^{BR}
 - (2D) How about White people ^{BR}
 - (2E) How about African American or Blacks ^{BO}
 - (2F) How about Hispanics or Latinos ^{BR}

2. **Inter-racial Trust Index:**
 - (2D) How about White people ^{BR}
 - (2E) How about African American or Blacks ^{BO}
 - (2F) How about Hispanics or Latinos ^{BR}

3. **Trust Government:**
 - (5A) How much of the time do you think you can trust the National Government to do the right thing ^{LK}
 - (5B) How about your local government ^{LK}

4. **Political Participation Index:**
 - (4C) Did you vote in the presidential election in 2008 when Senator McCain ran against Senator Obama ^{LK}
 - (4D) Did you vote for any of the California (state) propositions or SF (local) initiatives on the ballot in 2008 ^{LK}

5. **Civic Participation:** In past 12 months
 - (6A) Work on community project ^{BR}
 - (6C) Attended public meeting to discuss town or school affairs ^{BR}
 - (6D) Attended political meeting or rally ^{BR}
 - (6E) Attended any club or organizational meeting not including work ^{BR}

6. **Informal Social Ties:** How many times in the past 12 months have you
 - (6F) Had friends over to your home? ^{BO}
 - (6G) Been in home of a friend of a different race or had them in your home ^{BR}
 - (6H) Been in the home of someone of a different neighborhood or had them in your home ^{BR}

7. **Informal Social Ties & Engagement: In past 12 months**
 - (6F) Had friends over to your home ^{BO}
 - (6G) Been in the home of a friend or a different race or had them in your home ^{BR}
 - (6H) Been in the home of someone of a different neighborhood or had them in your home ^{BR}
 - (6I) Been in home of someone you consider a community leader or had them in your home ^{BR}

8. **Volunteerism Composite Index: Answer that is the best fit**
 - (6B) How many time in the past 12 months have you Donated blood ^{BR}
 - (6J) How many times in the past 12 months have you Volunteered ^{BR}

9. **Faith-based Engagement Composite Index:**
 - (6K) Are you a MEMBER of a local church, synagogue, or other religious or spiritual community ^{BO}
 - (6L) Not including weddings and funerals, how often do you attend religious services ^{BO}
 - (6M) In past 12 mo taken part in activities with people at your place of worship other than attending services ^{BO}

^{BO} This question also included in Bonding SC Index

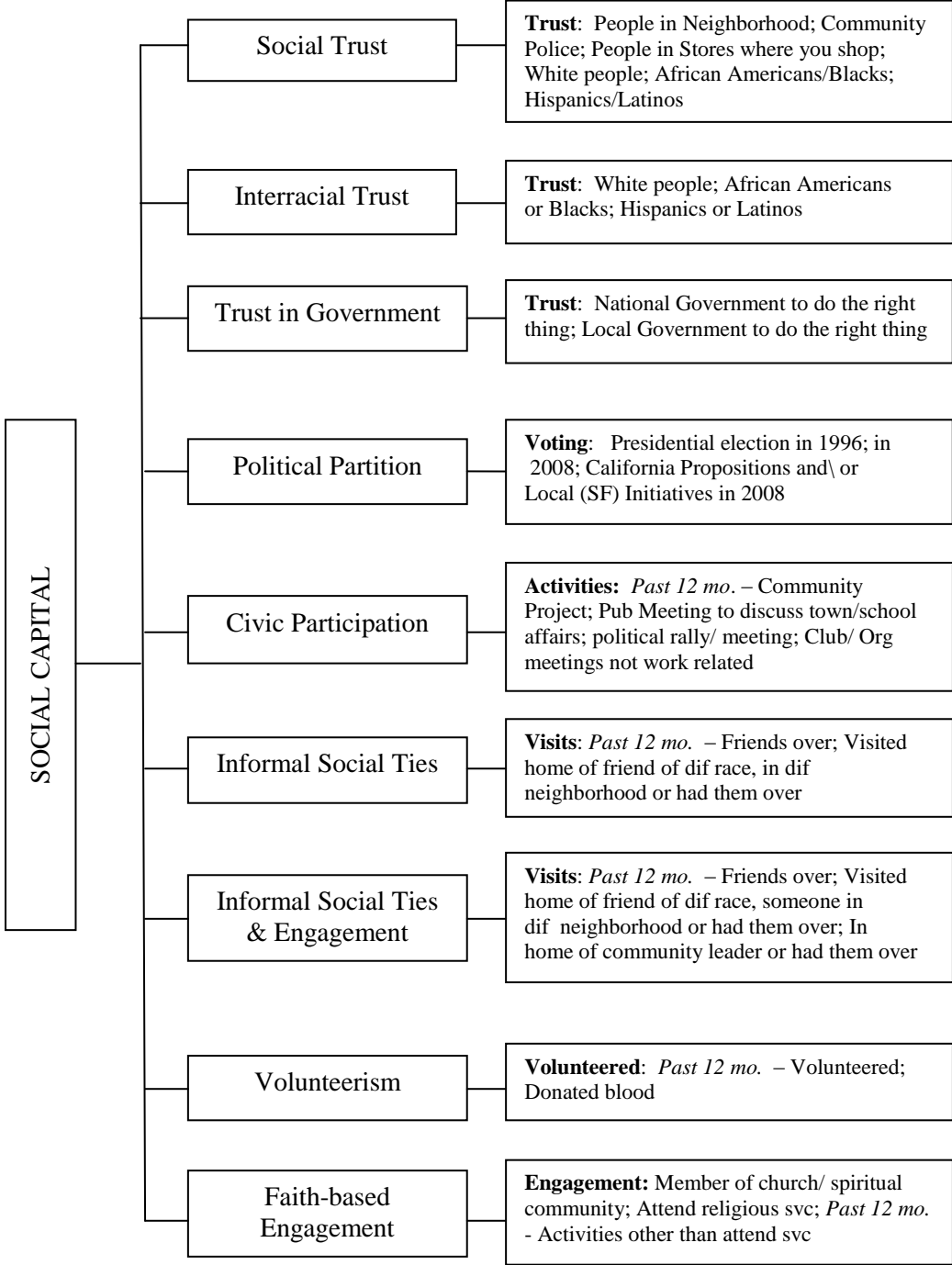
^{BR} This question also included in Bridging SC Index

^{LK} This question also included in Linking SC Index

Trust in Government Composite Index

This index measures the extent to which individuals trust governmental institutions. It also provides an indication of connections between individuals and

Figure 3.1 Dimensions of Social Capital Conceptual Framework



Adapted from Narayan & Cassidy (2001) & Claridge (2004)

systems that can help them gain resource and bring about change (Chazdon et al., 2008).

This dimension is included in the linking SC composite index.

Political Participation Composite Index

This index measures the extent to which people are engaged politically by determining whether respondents are registered to vote; voted in recent presidential election; voted for state or local propositions; and attend political meetings or rallies (Knudsen, Florida, & Rousseau, 2002). Political participation is a component of the linking SC index.

Civic Participation Composite Index

This index includes activities such as attending meetings not work-related, discussing town or school affairs, or working on community projects (SCCB, 2000). It is a component of the bridging SC index.

Informal Social Ties Composite Index

This index is characterized by whether individuals are connected through informal relationships/friendships and examines how often people exchange home visits with friends. Visiting the home of someone of a different ethnic group and someone who lives in a different neighborhood are also included (SCCB). This dimension is included in the bonding and bridging SC indices.

Informal Social Ties & Engagement Composite Index

This index is also characterized by whether individuals are connected through informal relationships/friendships and examines how often people exchange home visits with friends. Reciprocal visits with someone who is considered a community leader is included in this index in addition to visiting the home of someone of a different ethnic

group and visiting someone who lives in a different neighborhood (SCCB, 2000).

Having reciprocal visits with a community leader is the additional characteristic that distinguishes this dimension from the one above. This index is a component of the bonding and bridging SC indices.

Volunteerism Composite Index

This index refers to the different aspects of generosity and assesses respondent's volunteering at organizations and donating blood. It is a component of the bridging SC index.

Faith-based Engagement Composite Index

This index refers to religious membership, attendance, and participation in church-related activities. It is also a component of the bonding SC index.

Types of Social Capital

Bonding, bridging, and linking are the three types of SC. Bonding SC refers to co-operative and trusting relationships between individuals of a social network who share common sociodemographic characteristics and/or a common sense of social identity (Blakely & Ivory, 2006; Pomagaloska et al., 2009). Examples of bonding SC include individuals who self-identify as Black African American, as friends, and/or belonging to the same church or smoking cessation support group. Bridging SC is that which occurs among individuals who do not share common sociodemographic characteristics or social identity. There is mutual respect and social interaction between these individuals who are dissimilar (Blakely & Ivory; Pomagaloska et al., 2009). An example of bridging SC is the co-operative and trusting relationships between residents and community leaders; homeless, pregnant teens and their public health nurse case managers; or social workers

at the Women Infant and Children's Program, or the relationships that exists between members of different cultures or ethnic groups. Linking SC refers to co-operative and trusting relationships between people who are separated by a formal and clearly defined power differential or societal authority gradient (Blakely & Ivory, 2006; Pomagaloska et al., 2009). An example of linking SC would be the relationships between individuals and institutions or organizations (e.g. public agencies such as law enforcement, judicial system, or political structures).

Multiple and varying definitions of SC have resulted in various ways of conceptualizing and measuring the concept. In this research study, the SC concept is operationalized and measured at the individual level of analysis. The 28 questions on the SCSF were grouped to form the nine dimensions of SC based on face validity. Face validity also was used to group the survey questions for the three types of SC. The types of SC and the corresponding survey questions used to develop the three types of SC indices are discussed next. The superscript that appears at the end of each question represents the dimension of SC to which the survey question also belongs.

Bonding SC Composite Index

The five questions presented in Table 3.2 are used for measuring the co-operative and trusting relationships between individuals of a social network who share common sociodemographic characteristics and/or a common sense of social identity (Blakely & Ivory, 2006; Pomagaloska et al., 2009). These characteristics include being a member of the same ethnic group; home visits from friends; and religious affiliation.

Bridging SC Composite Index

The 14 questions in Table 3.3 are measures for reciprocal respect, cooperation, and exchange between individuals who typically do not share common sociodemographic characteristics or social identity (Blakely & Ivory, 2006; Pomagaloska et al., 2009).

Social trust, attending community events, reciprocal home visits between friends of a different race or neighborhood and volunteering are the SC characteristics of this index.

Table 3.2 Bonding SC Index Questions

SCSF #	Survey Questions
2E	Trust African American or Blacks ST
6F	Had friends over to your home ^{IST}
6K	Member of a local church, synagogue, or spiritual community ^{FBE}
6L	How often do you attend religious services not including weddings and funerals ^{FBE}
6M	Taken part in any sort of activities with people at your place of worship other than attending services ^{FBE}
ST Social Trust ^{IST} Informal Social Ties ^{FBE} Faith-based Engagement	

Table 3.3 Bridging SC Index Questions

SCSF #	Survey Questions
1	In general people can be trusted of you can't be too careful ST
2A	Trust people in your neighborhood ST
2C	Trust people who work in stores where you shop ^{ST, IT}
2D	Trust White people ^{ST, IT}
2F	Trust Hispanics or Latinos ^{ST, IT}
6A	Worked on community project ^{CP}
6B	How many times have you donated blood in past 12 months ^{VI}
6C	Attend public meeting to discuss town or school affairs ^{CP}
6D	Attend political meeting or rally ^{CP}
6E	Attend any club or organizational meetings not including work ^{CP}
6G	Been in home of a friend of different race or had them in your home ^{IST, ISE}
6H	Been in home of someone of different neighborhood or had them in your home ^{IST, ISE}
6I	Been in home of someone you consider a community leader ^{ISE}
6J	How many times have you volunteered in past 12 months ^{VI}
ST Social Trust ^{IT} Interracial Trust ^{CP} Civic Participation ^{IST} Informal Social Ties ^{ISE} Informal Social Ties & Engagement ^{VI} Volunteerism Index	

Linking SC Composite Index

The seven questions in Table 3.4 measure co-operative and trusting relationships that occur between people who are separated by a formal and clearly defined power differential or by a societal authority gradient (Blakely & Ivory, 2006; Pomagaloska et al., 2009). Linking SC is an extended version of bridging SC with vertical interactions that occur across a social hierarchal gradient (Poortinga, 2006). The SC characteristics include in this index are trust in local police, government, and voting behaviors.

Table 3.4 Linking SC Index Questions

SCSF #	Survey Questions
2B	Trust the police in your local community ST
4A	Currently registered to vote ^{PP}
4B	Voted in the presidential election in 2004; Senator John Kerry ran against President George Bush ^{PP}
4C	Voted in the presidential election in 2008; Senator John McCain ran against Senator Barack Obama ^{PP}
4D	Voted for any of the California (state) propositions or San Francisco (local) initiatives that were included on the election ballot in 2008 ^{PP}
5A	How much of time can you trust the national government to do the right thing ^{ST, TG}
5B	How much of time can you trust your local government to do the right thing ^{ST, TG}
ST Social Trust ^{TG} Trust in Government ^{PP} Political Participation	

It is of note that the resources associated with the three types of SC are likely to be different (Pesut, 2002; Pomagaloska et al., 2009). Bonding SC has the potential to provide individuals with strong emotional support, social support, and foster solidarity and group loyalty (Pesut; Pomagaloska et al.). Bridging and linking SC focuses on “linkages of networks or people across various levels of identity, purpose, and mission” (Pesut, p. 3). These two types of SC are likely to provide resources that are not found in one’s own close social circle (Pomagaloska et al.). “Bridging and linking SC both support exchange of information, knowledge, network development, effective community relationships, civic engagement, resource acquisition, and mutual goal attainment”

(Pesut, p. 3). It is common for people who are disadvantaged to have higher levels of bonding SC and lower levels of bridging and linking SC. Bonding SC (e.g. emotional and social support) can be characterized as a resource that helps disadvantaged individuals “*get by*” by coping with their deficits. Bridging and linking SC can provide access to information, education, employment, and material goods that can help people to “*get ahead*” by compensating for their deficits (Pomagaloska et al., 2009). The association between bonding SC, bridging SC, and health status (mental distress) is discussed next.

Mitchell and LaGory (2002) examined the relationships between community-level bonding SC, bridging SC, and the mental status of African American adults living in racially segregated neighborhoods in Alabama. A goal of the study was to assess whether SC was a mediator of distress and health-related resource in racially segregated urban neighborhoods. Bonding SC included civic participation (attended political meetings/rallies, attended a public meeting to discuss community or school affairs, donating blood, and volunteering). Bridging SC included social trust (most people can be trusted and people in the neighborhood can be trusted) and dissimilar social characteristics with regard to race, gender, and education among members in the subjects’ social networks.

Seventy-one percent of the subjects indicated that they trusted their neighbor. This was proportionately high compared to 61.0% of the African-American subjects in Putnam (2000) who reported trusting their neighbors ‘a lot’ or ‘sometimes’ (a difference of 10.0%). Mitchell and LaGory (2002) also reported that 32.0% indicated that people in general can be trusted; 29.0% had ties with someone of a different race; and less than

50.0% had ties with someone with a different level of education. Subjects with higher levels of bridging SC had lower levels of mental distress, -0.37 ($p < 0.01$). However, a higher level of bonding SC was correlated with higher levels of mental distress. That is, as civic participation (bonding SC) increased, mental distress also increased; 0.02 (< 0.05). The authors proposed that the higher proportions of mental distress in subjects with higher levels of bonding SC may be attributed to increased demands on one's time and over-commitment that often accompanies increased participation.

Social Capital and Health

During the past 15 years, the SC concept has gained wide acceptance among various disciplines. It has made significant contributions with regard to understanding the relationship between social factors and health in community psychology, social epidemiology, public health, and health disparities research. Empirical evidence that supports the relation between SC and health are presented next.

Berkman & Syme (1979) conducted one of the first studies in the US that examined the association between SC and health. The secondary data analysis in their cohort study was based on primary data collected between 1965 and 1974 using the Human Population Laboratory self-report survey. The purpose of the study was to examine the relationships between social ties and community ties (two dimensions of SC), self-rated health status, obesity, SES, cardiovascular risk factors related to health practices (smoking, alcohol consumption, physical activity, and utilization of health services), and age-specific all causes mortality rates. Data analyses were performed on 4,725 noninstitutionalized subjects ≥ 30 and ≤ 60 years old (2,229 men & 2,496 women) who lived in Alameda County, CA. The subjects with higher scores on the SC index

(community ties and social ties) had lower overall mortality rates; while controlling for age, sex, income, and education. Subjects who indicated greater use of preventive health services also had lower mortality rates. Lower income/education (SES) was associated with higher mortality rates. Further, subjects with higher scores on the SC index and lower SES had lower mortality rates than subjects with lower scores on the SC index and lower SES. The same relationship existed for subjects with higher scores on the SC index and higher SES. “The association between social ties and mortality was independent of self-reported health status, SES, and health practices (e.g. smoking, alcohol consumption, obesity, physical activity, utilization of preventive health services” (Berkman & Syme, p. 186).

At the meso and macro levels of analyses (e.g. community, regional, and national levels), “lower levels of SC (e.g. social trust and norms of reciprocity) have been associated with lower self-rated health status and higher rates of heart disease, cancer, infant mortality and violent deaths” (Kawachi, 2001, p. 32). Data from the CDC Behavioral Risk Factor Surveillance Surveys have suggested that “after controlling for individual-level differences (e.g. health insurance, education, personal income, ethnicity, smoking, and obesity), people who resided in low SC areas had a 40% increased risk of reporting poor health” (p. 32). At the individual or micro-level of analysis, SC (religious and civic engagement) has been highly associated with a ‘good or very good’ self-rated health status among elderly adults (Veenstra 2000). Further, higher levels of SC (social participation) have been linked to increased leisure-time physical activity (Lindstrom, Hanson, & Ostergren, 2001); and increased consumption of fruits and vegetables have been associated with higher levels of social trust and social ties (Poortinga, 2006).

Research has shown that SC (volunteering) has a protective effect on binge drinking among college students (Weitzman & Kawachi, 2000). Individuals who are more trusting and socially active also report better overall health (Poortinga, 2006). Research in Sweden has shown that “SC declines with age, is lower among individuals who are married or cohabiting, and lower for men compared to women” (Bolin, Lindgren, Lindstrom, & Nystedt, 2003, p. 2379). Four major pathways by which SC influences health and wellbeing are discussed next.

First, group expectations, social norms and high levels of social trust can positively influence health-related behaviors (Pomagaloska et al., 2009). Second, emotional support and social support serve as protective factors against chronic stress, which is known to increase heart rate, elevate BP, and contribute to other chronic illnesses (Lucy, 2007). These types of support are also known to reinforce positive health behaviors. Third, strengthening social ties between people, organizations, and systems can improve access to resources that will promote health and expand educational and economic opportunities at the individual and family level. Fourth, political engagement and civic participation can influence development of social policies and the appropriation of resources that affect people’s health (Pomagaloska et al.).

The manner and causal pathways by which SC influences health outcomes such as heart attacks, strokes, and enhances one’s ability to management chronic illness such as HBP are unclear. The mechanisms of SC that are believed to influence health outcomes, however, include tangible and intangible properties such as those that are identified in the concept analysis by Hsieh (2008). This includes strong social ties, an antecedent to reciprocal trust, group expectations, and social norms known to influence health

behaviors. Social support also is a protective factor that helps people cope with stress. This may include tangible support (direct help, information, and money) or intangible support such as caring, advice, and affirmation. According to Clement et al. (1994), strong social ties and social support can influence a person's self-confidence, a personal trait that increases one's motivation to perform an action. These two types of SC (social ties and social support) are also associated with self-efficacy, an individual's perception of his or her ability to successfully regulate events in their lives in order to produce or achieve desired outcomes (Clark & Dodge, 1999). Role-modeling and verbal persuasion are products of strong social ties that influence behaviors (Heslin, 2006) such as eating and exercise practices, tobacco use, binge drinking and substance abuse; especially when the model and the individual have similar sociodemographic attributes such as age, gender, ethnicity, and group affiliation (e.g. bonding SC).

Moreover, individuals and communities with higher levels of SC have lower all-causes mortality rates, higher ratings of self-reported health status, and engage in more health promoting behaviors compared to individuals and communities with lower SC. Szreter and Woolcock (2004) affirm that bonding SC promotes health and well-being by way of the social support; bridging SC influences health and well-being by providing solidarity and a sense of community that are antecedents to taking collective action to resolve community problems; and linking SC serves as a mechanism for the mobilization of resources such as health programs and services. A discussion of SC at the community level of analysis is presented next.

Kim, Subramanian, and Kawachi (2006) conducted a telephone survey of 24,835 subjects from 40 communities in the US to examine the relationship between self-rated

health and community bonding and community bridging SC. Measures of community bonding and bridging SC were associated with formal group involvement and demographic characteristics of the group. This survey included ethnicity, gender, education, trust in members of one's ethnic group, diversity of friendships within the social network, and visits between people of different ethnic groups. The community bonding SC index was comprised of similar characteristics among group members. The community bridging SC index was comprised of the characteristics that were dissimilar. A statistically significant relationship between community bonding SC and fair/poor self-rated health was found. There were statistically significant relationships between community bonding SC and fair/poor self-rated health (OR= 0.86; 95% CI = 0.80 to 0.92) and community bridging SC and fair/poor self-rated health (OR = 0.95; 95% CI = 0.88 to 1.03). The authors concluded that community bonding and community bridging SC have a modest protective factor on self-rated health; and building these two forms of SC might serve as a means to improve health at the community level.

Conclusion

This information suggests that building bonding, bridging, and linking SC may be viable strategies for improving health at the individual, community, and population levels. Determining ways in which nurses can create and utilize nursing interventions to build SC and improve health outcomes could be a future direction for nursing (Ching-Hsing, 2008). SC measures will be tested in the next chapter.

Most of the research studies that contributed to develop of the SC conceptual framework in this study were based on a secondary analysis of survey data from earlier cohort or cross-sectional studies. The findings of the research studies that were reviewed

(based on primary and secondary data sets) examined the relationship between SC and health-related behaviors, mortality rates, and/or self-reported perceptions of health status. The sociodemographic characteristics of the sample, BP frequencies, awareness of BP, eating habits and exercise self-confidence, lifestyle behaviors, SC, social support, chronic disease management self-confidence, depression, antihypertensive medication adherence self-efficacy, and their association with BP are examined in this study. The research design, setting, sample, and instruments used for data collection are described next in Chapter 4.

Chapter 4

Methods

Introduction

This chapter provides a description of the research design, settings, and sample. The study variables as well as the protocol for data collection for this study also are included. The final section describes the plan for data management and analysis.

This descriptive cross-sectional study examines the relationship between social factors and BP. A model of the cross-sectional study is included in Figure 4.1. The research questions for this study are as follows: **RQ1.** What is the frequency of HBP in Black African American adults? **RQ2.** Is there a relationship between BP awareness and BP in Black African American adults? **RQ3.** Is there a relationship between eating habits and exercise self-confidence and BP in Black African American adults? **RQ4.** Is there a relationship between lifestyle behavior and BP in Black African American adults? **RQ5.** Is there a relationship between the dimensions of SC and BP in Black African American adults? **RQ6.** Is there a relationship between social support and BP in Black African American adults? **RQ7.** Is there a relationship between chronic disease management self-confidence and BP in Black African American adults? **RQ8.** Is there a relationship between depression and BP in Black African American adults? **RQ9.** Is there a relationship between antihypertensive medication adherence self-efficacy and BP in Black African American adults? **RQ10.** Is the subset of research questions RQ2 through RQ9 independently predictive of BP in Black African American adults? The research questions are described further in Table 4.1. There is a relationship between SC and BP in this sample of Black African American adults is the hypothesis for this research study.

Figure 4.1 Model of Cross-sectional Study

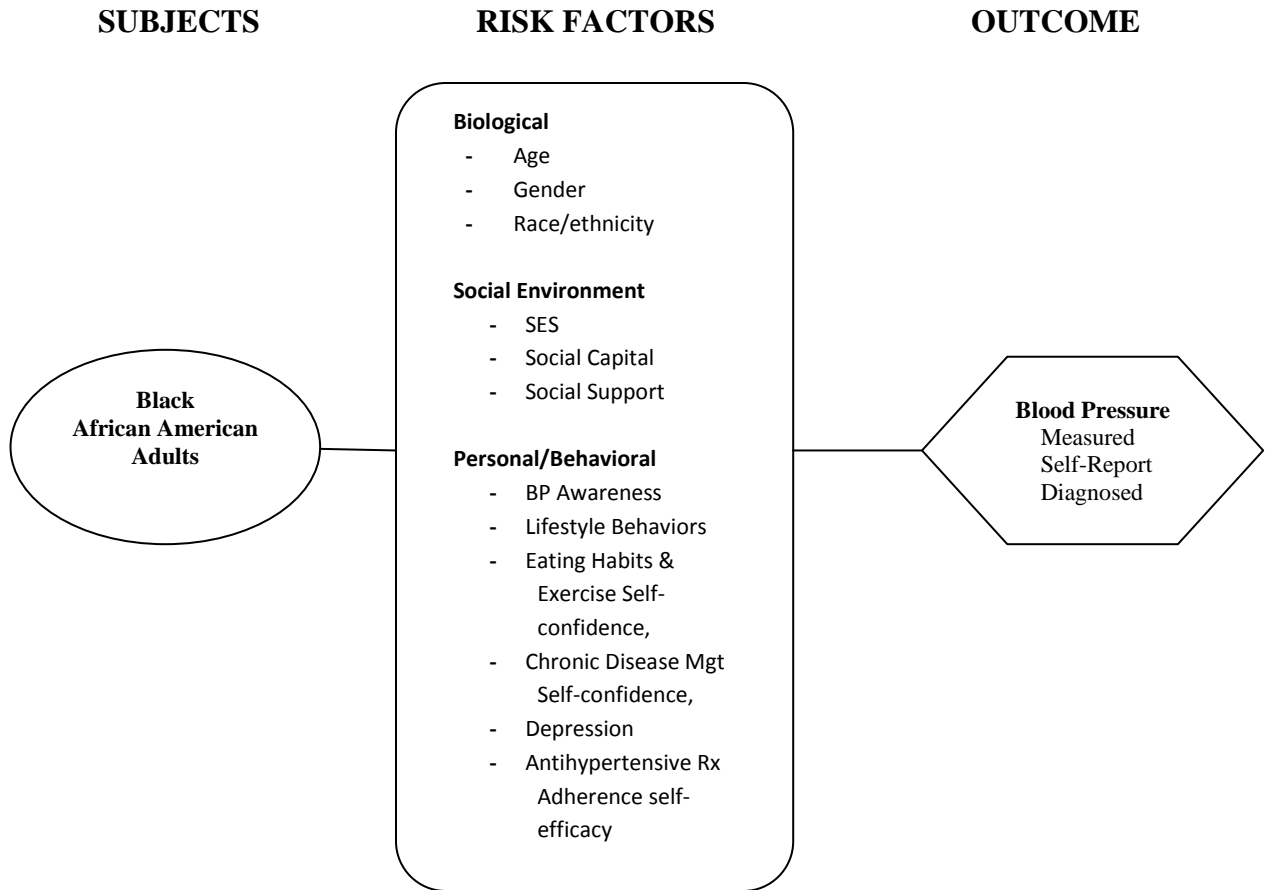


Table 4.1 Research Questions & Instrumentation

Research Questions	Instrumentation (Number of Questions)	Measures
RQ 1. What is the frequency of high blood pressure (HBP) in Black African American adults?	^A Omron Automatic BP Device ^B Antihypertensive Medication Adherence Self-efficacy Scale ^C Awareness of BP Survey (2 questions)	^A Measured BP (\geq 140/90mmHg) ^B Prediagnosed BP (completed antihypertensive med survey) ^C Self-reported (first & last questions)
RQ 2. Is there a relationship between hypertension awareness and BP in Black African American adults?	Awareness of BP Survey Questionnaire (21)	BP Knowledge & Awareness
RQ 3. Is there a relationship between eating habits & exercise self-confidence and BP in African American adults?	Eating & exercise Habits Self-confidence Survey	-2 Exercise subscales -4 Eating subscales
RQ 4. Is there a relationship between lifestyle behavior and BP in Black African American adults?	Lifestyle Behavior Questionnaire (11)	-Eat, Exercise, Stress Mgt subscale Tobacco subscale
RQ 5. Is there a relationship between the seven Dimensions of Social Capital and BP in Black African American adults?	Social Capital Bench Mark Survey-short form (28)	Dimensions of Social Capital
RQ 6. Is there a relationship between social support and BP in Black African American adults?	Enriched Social Support Instrument (7)	Social Support
RQ 7. Is there a relationship between chronic disease management self-efficacy and BP in Black African American adults?	Stanford Chronic Disease Management Self-confidence Scale (13)	-Get Info about Disease subscale -Get help from Com/Family/Friends subscale -Communicate with MD subscale -Manage Disease in General subscale
RQ 8. Is there a relationship between depression and BP in Black African American adults?	PHQ-2/PHQ-9 Depression Scale (2 or 9)	PHQ2 subscale PHQ9 subscale (if applicable)
RQ 9. Is there a relationship between medication adherence self-efficacy and BP in Black African American adults?	Medication Adherence Self-efficacy Scale (26)	Confidence in taking Antihypertensive Medications
RQ 10. Is there a statistically significant relationship between the independent predictor variables in RQ1 through RQ9 and BP in Black African American adults?	Survey Instruments indicated above	Logistic Regression Model: Covariates, RQ 2 – RQ 9 & HBP

Study Variables

The predictor variables of this study are the sociodemographic characteristics of the sample, BP awareness, lifestyle behaviors, eating habits and exercise self-confidence, SC, social support, chronic disease management self-confidence, depression, and antihypertensive medication adherence self-efficacy. Body weight and BP were measured. The subjects also provided verbally their height measurements in feet and inches. The outcome variable of the study is BP, with a HBP cutpoint value \geq 140/90mmHg. Three methods were used to obtain the subjects' BP: (1) BP was measured by the investigator; (2) subjects indicated that they had a preexisting diagnosis of HBP by completing the Antihypertensive Medication Adherence Self-efficacy scale; and (3) subjects answered the first question labeled BPO (*My usual BP is – below normal, normal, higher than normal, or don't know*) and filled in the blanks for the last question, BP21 (*My usual BP is ____/____ mmHg*) on the Awareness of BP Survey. The covariates include sex, age, ethnicity, marital status, income, education, citizenship, zip code, number of children in home \leq 17 years old, and rent or own place where you live. The number of adult children $>$ 17 years old who lived in the home was not assessed.

Sample and Settings

Sample

A convenience sample of 211 non-institutionalized Black African American adults who met the inclusion criteria were recruited to participate in the study. The inclusion criteria were as follows: self-identify as Black American of African descent, African American, or Black African American; adult \geq 18 years old; born and raised in the US; can read and speak English; lives in a California community dwelling; expresses

willingness to participate in the study; has not had a major CVD event (.e.g. heart attack or stroke) or currently on dialysis. Pregnant women were excluded from participating in the study because they are at risk for pregnancy-related hypertension. This population was excluded from the study because gestational hypertension is a separate phenomenon

Approximately 100 additional subjects were recruited for this study. This sample size meets the minimum requirement of 10 subjects per variable (Burns & Grove, 2001), given the proposed measure of 9 variables measured (times) 10 subjects = 90. Since this is a cross-sectional study, 200 subjects seem sufficient to include demographic variables in the statistical analysis and describe the aims of the study. The additional 100 subjects also allowed for selective missing data.

Setting

The subjects who met the inclusion criteria and agreed to participate in the study were recruited from 10 different locations in California; 97% were living in the San Francisco Bay Area. The remaining 3% of the subjects lived in the Modesto and Redondo Beach areas of California. Each recruitment site was receptive and supportive of nursing research and expressed an interest in taking part in this research study. See Table 4.2.

Table 4.2 Data Collection Recruitment Sites & Locations (n=208)

Recruitment Sites	Locations	%
Faith-based Organizations (2)	Oak/Berkeley & Hayward	66
Community Health Clinic (1)	San Francisco	11
Health Fairs (1)	San Mateo County	8
Social Gatherings (5)	Oakland, Richmond, Modesto, Redondo Beach, & San Francisco	7
Adult Day Care Health Center (1)	San Francisco	4
Public Health Community Org (1)	East Palo Alto	3
Neighborhood Festival (1)	Hayward	1

Faith-based Organizations. Arrangements were made to have the pastors of two San Francisco Bay Area churches announce the research study during the beginning and at the end of Sunday services on May 17 and 21, at one church, and on May 31, June 14, and 21, 2009 at the other. Informational flyers to recruit subjects for the study were placed by the investigator near the church entrances during Sunday school classes and prior to general worship in the respective chapels. Rooms were designated at each location for data collection. The prospective subjects were given a verbal overview of the study based on the flyer and advised that there were no known risks associated with participating in the study. See recruitment flyer in Appendix B.

A free-food and pantry program operates every Monday from 3 pm to 6 pm at the church located in the Oakland/Berkeley area. On Monday May 18 and June 8, 15, and 22, 2009, participants who began waiting in line (starting at noon) for a meal and bags of groceries were given information about the study and asked to participate by the investigator or by one of the two volunteer, registered nurses (RN) who coordinated the free-food program. A room that could accommodate up to 15 individuals was provided for the subjects to complete the survey. A separate hallway area was used to obtain BP and/or body weight measurements for those who requested additional privacy. Typically, groups of between three and six individuals completed the survey at one time. The participants were asked to have their BP and body weight measurements taken prior to eating a meal. All individuals who had agreed to participate in the study were seated in the designated room, given additional information about the study and time to ask questions for further clarity. After the subjects signed the consent forms and while

completing the survey, the subjects were selected individually by the investigator who then performed the BP and body weight measurements. After the measurements were taken, the subjects returned to their seats to complete the questionnaire. The church in the Hayward area also provided a RN to assist the investigator with organizing groups of participants and distributing the questionnaires.

Community Health Center. The executive director of a community-based health clinic asked to place flyers at this location in order to recruit subjects when she learned of this study. On three occasions, the executive director provided a space adjacent to the health clinic and actively recruited participants. In addition, information about the study was disseminated throughout the surrounding community by one of the staff employees. Ten prospective subjects who expressed a willingness to participate were excluded from participating in the study because they could not articulate that they understood the meaning of informed consent or did not meet the inclusion criteria because they were pregnant, had experienced a heart attack, major stroke, or were currently on dialysis (n= 10).

Health Fair. Data were collected in a public park (Coyote Point in San Mateo) during the last week of May 2009 at the annual 'Soul Stroll' health fair that is sponsored by the African American Community Health Advisory Committee of San Mateo County. The event consisted of a 3K and 5K walk/run and culturally specific health information targeting African Americans. There were 36 health-centered organizations that provided health information at this event. A table and separate space were provided to the investigator for data collection. A volunteer RN assisted the investigator with organizing subjects for body weight and BP measurements and distributing the questionnaires. The

RN also measured the BP and body weight of the subjects who wanted to know their BP measurements but did not want to participate in the study.

Social Gatherings. Different social events (e.g. birthday or Father's Day celebrations, and private parties) where colleagues, families, and friends gathered were also recruitment sites. The investigator took body weight and BP measurements. Most of the questionnaires were completed by the subjects during these events. Three subjects returned their questionnaires by US mail.

Adult Day Care Center. Agency personnel (e.g. RN, Certified Nursing Assistants, event counselors and a social worker) that were known to the investigator were recruited at this site. The clients of the day care center were not recruited to participate in the study because a high percentage of the clients were cognitively impaired. A private space was provided to obtain body weight and BP measurements. Four percent of the sample was recruited at this facility. After their BP and body weight measures were obtained, three of the participants at this site were given the self-administered survey to complete during the weekend. The completed questionnaires were picked up by the investigator the following Monday.

Community Public Health Programs. The personnel of a community-based low-income, high-risk pregnancy perinatal program and a spouse of one of the employees participated in the study. No clients at this agency were recruited because they were considered a vulnerable population and did not meet the inclusion criteria. A private space was provided to obtain body weight and BP measurements. Two of the participants at this site were given the survey questionnaire to complete. The completed questionnaires were picked up by the investigator later that day.

Community Summer Festival. This community gathering was hosted by a SF Bay Area church and targeted Latino Americans and African Americans who lived in the surrounding neighborhoods. Enjoying culturally specific arts, crafts, books, and food was the intended purpose of this event. A canvas shaded table and separate space were provided for data collection. A volunteer RN assisted the investigator with organizing subjects for body weight and BP measurements and distributing the questionnaires.

Instruments

A combination of nine survey instruments were administered to assess the following characteristics: sociodemographics; BP awareness (Awareness of HBP Questionnaire; AWBP); lifestyle behaviors (Lifestyle Behavior Questionnaire; LBQ); eating and exercise self-confidence (Eating Habits & Exercise Confidence Survey; EESE); SC (Social Capital Bench Mark Survey-*Short form*; SCSF); social support (Enhancing Recovery in Coronary Heart Disease Social Support Questionnaire; ESSI), chronic disease management self-confidence (Chronic Disease Self-confidence Scale; CDSE); depression (Depression Screener; PHQ) (Spitzer et al., 2008); and antihypertensive medication adherence self-efficacy (Antihypertensive Medication Adherence Self-efficacy Scale; MASE). These instruments were combined, as subsets, into one master self-administered pencil and paper survey questionnaire entitled ‘Social Influence on HBP Survey Questionnaire’ to reflect the title of this research study. The name of each subset-instrument was placed in the footnote section on the master questionnaire. See Table 4.3 below that provides a framework of the Social Influence on HBP Survey Questionnaire. Descriptions of these instruments follows next.

Table 4.3 Social Influence on Life Style Behaviors and HBP Survey Questionnaire

Section	Variables	Instrument Used	# of Questions
1.	Demographics	Social Capital Bench Mark Survey (<i>Short form</i>)	14
2.	Blood Pressure Awareness	Awareness of Blood Pressure Questionnaire	21
3.	Lifestyle Behaviors	Lifestyle Behavior Questionnaire	11
4.	Self-confidence: Eating & Exercise	Eating Habits & Exercise Confidence Survey	32
5.	Social Capital (Dimensions)	Social Capital Bench Mark Survey (<i>Short-form</i>)	28
6.	Social Support	Enriched Social Support Instrument	7
7.	Self-confidence: Chronic Disease Management	Patient Education Chronic Disease Self-confidence Scale	13
8.	Depressive Mood	Depression Scale (PHQ-2/PHQ-9)	2/9
9.	Self-efficacy: Med Adherence	Medication Adherence Self-efficacy Scale	26
			Total = 161
10.	Blood Pressure		
11.	Body Weight		

Awareness of BP Questionnaire (AWBP)

The AWBP measurement in Appendix C was used to determine awareness of the subject's own BP, knowledge about the risk factors for HBP and strategies for effective BP control (Lee, 2007). The instrument contains 21-questions that are divided into two sections. The first section contains 20 items. Fifteen of these questions have the

response options: (1) Disagree; (2) Agree; and (3) Don't Know. Five questions have the response options: (1) Yes; (2) No; and (3) Don't Know. The last question requires filling in the blank to indicate usual SBP and DBP measurements. There is one awareness questions (BPO) where subjects are to indicate whether their *Usual BP* is below normal, normal, higher than normal, or don't know. On the last question (BP21), subjects are to enter their *usual* SBP and DBP *measurements*. The total score on this scale ranged from a low score of 6 to a possible high score of 27. Higher scores indicate higher levels of BP awareness. Content validity was established by nurse specialists. Reliability was determined in a sample of elders who were ≥ 60 years old and was indicated by a standardized Cronbach's alpha coefficient of 0.81 ($p < 0.01$). The test-retest reliability coefficient of the AWBP is 0.73 ($p < 0.01$).

Eating Habits & Exercise Self-confidence Survey (EASE).

The EASE was used to assess eating habits and exercise self-confidence, factors associated with health behaviors in non-clinical populations (Sallis et al., 1988). This instrument measures confidence in one's ability to maintain specific eating and exercise behaviors for six months. The survey includes 32 questions and two sections. See Appendix D. The first 20 questions are grouped into four subscales that assess confidence in motivating oneself to engage consistently in healthy eating habits for at least six months. The remaining 12 questions are group into two subscales and assess confidence in motivating oneself to continue or increase regular exercise consistently for at least six months. The response items include: (1) I know I cannot; (2) Pretty Sure I cannot; (3) Maybe I can; (4) Pretty Sure I Can; and (5) I know I Can. The self-

confidence score for eating habits self-confidence ranged from 1.0 to 5.0 with higher scores indicating higher confidence.

Lifestyle Behavior Questionnaire (LBQ).

The LBQ was used to assess current behaviors related to healthy eating, physical activity, managing stress, as well as smoking and exposure to second-hand smoke. See Appendix F. This instrument has two subscales and a total of 11 items. The LBQ Health subscale has four questions related to healthy eating, two on physical activities, and one on stress management. The LBQ Smoke subscale has four related to tobacco use and exposure. The four response items for questions in both subscales include:

(1) Regularly; (2) Often; (3) Sometimes; and (4) Never. These response items will be recoded prior to statistical analysis to associate higher scores with healthier lifestyle behaviors. The items on healthy nutrition, physical activity, and tobacco use were from the Health-Promoting Lifestyle Profile (Walker, Sechrist, & Pender, 1987) by Kim, Koniak-Griffin, Flaskerud, and Guarnero, (2004). The modified instrument contained 23 items and the same response items that are described above. It was originally developed in English, translated into Spanish, and used in a clinical trial to assess cardiovascular-related lifestyle behaviors in a sample of Latino men and women ≥ 18 years old (Walker et al.). The reliability of the questionnaire was indicated by a Cronbach's alpha of 0.77. The alpha values for the subsets of questions were as follows: 0.71 for healthy nutrition, 0.68 for physical activities, and 0.77 for smoke-free environments. The one question on stress management was developed by the investigator based on stress management as a risk factor for HBP (Paradies, 2006).

Social Capital Bench Mark Survey, *short-form* (SCSF).

The Social Capital Community Benchmark Survey short-form was developed by the Saguaro Seminar: Civic Engagement in America Project, a SC research group at the John F. Kennedy School of Government, Harvard University. The SCSF contains 28 questions with multiple response items for measuring the dimensions of SC. Higher scores indicate more SC. The survey can be seen in Appendix F. The SCSF was designed to be used as a telephone survey or to be administered by face-to-face interview. This is the first known study to use a paper and pencil version of the SCSF for data collection. The questions on the SCSF are grouped into nine dimensions of SC: (1) social trust; (2) interracial trust; (3) trust in government; (4) political participation; (5) civic participation; (6) informal social ties; (7) informal social ties and engagement; (8) volunteerism; and (9) faith-based engagement. These same groups of questions were also used to create indices for measuring the three types of SC (bonding, bridging, and linking SC). Face validity was the criteria used to identify the survey questions to be included in each index. Next, the questions were grouped according to similarity in response options. Then internal consistency reliability (ICR) was employed to determine homogeneity among the items within each of the respective categories (dimensions and types of SC) based on a Cronbach's alpha ≥ 0.70 and < 0.92 . "For a tool to be considered reliable, a level of 0.70 or higher is considered to be an acceptable level of reliability" (LoBiondo-Wood & Haber, 2006, p. 346). The number of questions grouped to form the respective SC dimensions are as followings; social trust (8 questions), interracial trust (3 questions), trust in government (2 questions), political participation (3 questions), civic participation (4 questions), informal social ties (3 questions), informal social ties and

engagement (4 questions), giving and volunteering (2 questions), and faith-based engagement (3 questions). For the survey questions (based on ICR) used to determine the three types of SC indices (bonding, bridging, and linking), see Table 4.4.

Table 4.4 ICR for Types of SC Composite Indices

	SOCIAL CAPITAL DIMENSIONS									
TYPES of SOCIAL CAPITAL	ST	IT	TG	PP	CP	IST	ISE	VI	FBE	Internal Consistency Reliability
Bonding	2E					6F	6F		6K, 6L, 6M	(0.83) FBE: 6K, 6L, 6M
Bridging	1, 2A,	2C, 2D, 2F,			6C, 6D, 6E,	6G, 6H,	6G, 6H, 6I	6B, 6J		(0.81) IT:2C, 2D,2F CP:6C, 6D, 6F, ISE: 6G, 6H, 6I
Linking	2B, 5A, 5B		5A, 5B	3, 4A, 4B, 4C 4D						(0.77) TG: 5A, 5B (0.81) PP: 4B, 4C, 4D
ST Social Trust ^{IT} Interracial Trust ^{TG} Trust in Government ^{PP} Political Participation ^{CP} Civic Participation						^{IST} Informal Social Ties ^{ISE} Informal Social Ties & Engagement ^{VI} Volunteerism ^{FBE} Faith-based Engagement				

Table 4.4 Corresponding survey questions for each Type of SC

BONDING SC:

2E – Trust African Americans: (1) trust them a lot; (2) some; (3) only a little; (4) not at all; (4) not sure/don't know

6F – In past 12 months had friends over to your home – (1) more than once a week –to- (8) never did this; (9) not sure/don't know

6K – Member of a local church or religious/spiritual community – (1) yes; (2) no; (3) don't know

6L - How often do you attend religious services, not including weddings/funerals – (1) every week; (2) almost every week; (3) once/twice a month; (4) few time per year; (5) less often than that; (8) don't know
(recode): Do you attend religious services almost every week or more - (1) yes; (2) no; (23) not know

6M – Past 12 months, taken part in activity with people at your church other than attending services – (2) yes; (2) no; (3) don't know

BRIDGING SC:

1 – Generally speaking most people can be trusted or that you can't be too careful in dealing with people – (1) people can be trusted; (2) can't be too careful; (3) don't know/not sure

- 2A – Trust people in your neighborhood- (1) trust them a lot; (2) some; (3) only a little; (4) not at all; (5) not sure/don't know
- 2C – Trust people in stores where you shop - (1) trust them a lot; (2) some; (3) only a little; (4) not at all; (5) not sure/don't know
- 2D – White people - (1) trust them a lot; (2) some; (3) only a little; (4) not at all; (5) not sure/don't know
- 2F - Hispanic or Latinos - (1) trust them a lot; (2) some; (3) only a little; (4) not at all; (5) not sure/don't know
- 6A – Worked on community project – (1) more than once a week –to- (8) never did this; (9) not sure/don't know
- 6B – How many times donated blood, past 12 months - write in # of times
- 6C – Attend public meeting where town or school affairs was discussed in past 12 months -(1) more than once a week –to- (8) never did this; (9) not sure/don't know
- 6D – Attend political meeting or rally past 12 months - (1) more than once a week –to- (8) never did this; (9) not sure/don't know
- 6E – Attend club or organizational meeting not work-related - (1) more than once a week –to- (8) never did this; (9) not sure/don't know
- 6G – Been in home of a friend of different race or had in your home - (1) more than once a week –to- (8) never did this; (9) not sure/don't know
- 6H- Been in home of someone of a different neighborhood or had in your home - (1) more than once a week –to- (8) never did this; (9) not sure/don't know
- 6I – Been in home of someone you consider a community leader or had in your home - (1) more than once a week –to- (8) never did this; (9) not sure/don't know
- 6J – Volunteered in past 12 months - (1) more than once a week –to- (8) never did this; (9) not sure/don't know

LINKING SC:

- 2B – Trust police in your local community – (1) trust them a lot; (2) some; (3) only a little; (4) not at all; (5) not sure/don't know
- 3 – Interest in politics/national affairs – (1) very interested; (2) somewhat; (3) only slightly; (4) not at all; (5) not sure/don't know
- 4A – Currently registered to vote – (1) yes; (2) no; (3) not eligible; (4) not sure/don't know
- 4B - Voted in presidential election on 2004 – (1) yes, voted; (2) no, did not; (3) not eligible to vote; (8) not sure/don't know
- 4C - Voted in presidential election on 2008 – (1) yes, voted; (2) no, did not; (3) not eligible to vote; (8) not sure/don't know
- 4D – Voted for California proposition or local initiative during the 2008 election - (1) yes, voted; (2) no, did not; (3) not eligible to vote; (8) not sure/don't know
- 5A – Can you trust the national government to do what is right – (1) just about always, ; (2) most of the time; (3) only some of the time; (4) hardly every; (5) not sure/don't know
- 5B - Can you trust the local government to do what is right – (1) just about always, ; (2) most of the time; (3) only some of the time; (4) hardly every; (5) not sure/don't know

The confirmatory factor analysis used to establish the psychometric properties is reported in Stout (2008). Construct validity and test-retest reliability at the meso (community) level of analysis are reported in Knudsen, Florida, & Rousseau (2002) and by the Annie E. Casey Foundation (2007). Construct validity based on correlation coefficients are reported in Claridge (2004-2011) for the following dimensions of SC: social trust- most people can be trusted (0.92); civic participation- worked on community project during last 12 months (0.65) and percentage of individuals who attended a public

meeting on town or school affairs in last 12 months (0.77); volunteerism – number of times volunteered during last 12 months (0.66); and political participation – turnout in presidential election (0.84)

Enhancing Recovery in Coronary Heart Disease Social Support Instrument (ESSI).

The ESSI was developed as a social support measure for patients undergoing treatment for CAD (Mitchell et al., 2003; Vaglio et al., 2004). Six questions have response options that include all of the time (coded = 1), most of the time (coded = 1); some of the time (coded = 2), a little of the time (coded = 2), and none of the time (coded = 2). See Appendix G. The response item for the last question (married or single) is either yes (coded = 1) or no (coded = 2). Higher scores indicate more social support. Internal consistency for the ESSI was Cronbach's alpha = 0.88 ($p > .001$). Test-retest analysis at five months was 28.5 (± 5.6) and at six months 20 (± 3.8) ($p = 0.98$), indicating no significant differences in scores. The intra-class correlation coefficient was 0.94, indicating strong reproducibility (Vaglio et al.).

Chronic Disease Self-confidence Scale

The CDSE is an instrument with 10 subscales for assessing self-confidence in one's ability to manage chronic disease. See Appendix H. Four of the subscales were included in this study: getting information about disease; obtaining help from community, family, and friends; communicating with physician; and managing the disease in general. Their respective psychometric properties are presented in Table 4. 5. The subjects indicated their level of confidence by choosing a number from 1 to 10. The response-items range from *not at all confident* (1) to *totally confident* (10) (Lorig,

Stewart, Ritter, Gonzalez, Laurent, & Lynch, 1996). Higher scores indicate higher confidence.

Table 4.5 Psychometrics for Chronic Disease Self-confidence Subscales

Scales Reliability	Number of Items	Internal Consistency	Test- retest
Get Information about disease	1	-	.72
Obtain help from community, family, friends	4	.77	.85
Communication with physician	3	.90	.88
Manage disease in general	5	.87	-

Depression Screener.

The PHQ-2 is a popular two-item mood assessment tool that asks the subject how often you have been bothered by any of the following problems over the preceding two weeks: (1) little interest or pleasure in doing things; and (2) feeling down, depressed, or hopeless. The response items include *not at all*, *several days*, *more than half the days*, and *nearly every day*. See Appendix I. If the subject’s response is other than *not at all* to either of these two items, it indicates that depression may be present. In such cases, the subject is instructed to answer the other seven items (PHQ-9). Higher scores indicate more symptoms of depression. The construct and criterion validity of the instrument as reported in Kroenke, Spitzer, & Williams, (2003) “make it an attractive measure for depression screening in busy clinical settings or as part of comprehensive health questionnaires” (p. 1284).

Antihypertensive Medication Adherence Self-efficacy Scale (MASE).

The MASE is an antihypertensive medication adherence self-efficacy scale that was designed to assess confidence in adhering to the antihypertensive medication

regimens. (Ogedegbe, Mancuso, Allegrante, & Charlson, 2003). This instrument was developed and evaluated in a sample of urban ambulatory African American patients with HBP. See Appendix J. The 26- items instrument contains the response items *not at all sure*, *somewhat sure*, and *very sure*. Higher percentage frequencies scores and higher mean scores indicate higher self-confidence. The Cronbach's alpha coefficient for the instrument is 0.95, indicating a strong correlation between the 26 items (Ogedegbe et al).

Procedures for Data Collection

Approval for the conduct of this research study was granted by the University of California-San Francisco Committee on Human Research in December 2008. The recruitment sites were identified and obtained through the investigator's knowledge of the Black African American Community in the San Francisco Bay Area and through the investigator's formal and informal social networks. The formal networks included Abundant Life, a coalition of African American religious organizations and voluntary associations that is part of the UCSF Helen Diller Family Comprehensive Cancer Center's Community Advisory Committee, and the African American Community Health Advisory Committee of San Mateo County which is a community partnership with Mills-Peninsula Health Services that is made up primarily of residents of San Mateo County and is dedicated to addressing issues impacting the health of the African American community. The informal social networks included colleagues, friends, and acquaintances. Various individuals in leadership positions at various community-based organizations and social groups were identified and contacted by the investigator. The purpose of the study was described, all questions and concerns addressed, and each person was asked to assist with recruiting subjects for the study. Flyers for recruitment

that included the aims and objectives of the study and contact information for the investigator were placed or given to various community-based organizations to be posted.

See flyer in Appendix C

In April 2009, the investigator gave a presentation to several members of the Executive Committees of Abundant Life and the African American Community Health Advisory Committee of San Mateo County and obtained their assistance with recruiting the subjects. Both organizations were eager to assist and provided ongoing assistance (posting flyers, making announcements, distributing surveys, and organizing participants) during the data collection phase of the study.

Recruitment and data collection took place between May and July 2009. The participants were allowed time to ask questions about the study and to express any concerns. Next, the participants were given two copies of a '*Consent to Participate in a Research Study*' forms, given time to read the document, and the opportunity to ask further questions prior to providing their written consent. See consent form in Appendix K. Once the consent forms were signed, a copy was collected by the investigator and a copy was given to the participant. Next, the subject's body weight was measured by an EatSmart Precision Digital Scale and subjects were asked their height in feet and inches. Body mass index (BMI) was not calculated because the height of each subject was obtained based on self-report rather than by objective height measurements. Each subject was asked to be seated after they had submitted the signed consent form and expressed that they had no further questions or concerns regarding the study. While seated, they were asked if they had eaten, exercised, consumed caffeine, alcohol, or nicotine within the past 30 minutes, or if they felt as though they had a full bladder. After a 'no'

response was given, two arterial BPs were taken and averaged to record a BP measurement. The BP measurement criteria and protocols published by AHA were used for BP measurement (JNC-7, 2004). An Omron BP automated device was used to measure BP. All body weight and BP measurements were assessed by the investigator. After these measurements were completed, the subjects were asked to complete the pencil and paper survey questionnaire. The subjects were also provided the alternative option of answering questions that would be read to them from the written questionnaire during a structured interview. Three of the subjects (n=3) selected the structured interview option. The questions from the survey were read to these subjects by the investigator who also recorded the responses on the paper and pencil survey questionnaire form. Additional privacy was offered to subjects during body weight and BP measurements that took place in public or open spaces. The issue of privacy was not raised as a concern by any subjects in the study. AHA cardiovascular health information specific to African Americans was given to all participants including those who did not complete the survey questionnaire or provide body weight or BP measurements (n=36). See Appendix N. The subjects who completed all aspects of the study received a stipend (\$10 Safeway gift certificate).

Ethical Considerations

The investigator accessed information from or about participants through a paper and pencil survey questionnaire (n=205) and structured personal interviews (n=3). In addition, BP and body weight were accessed by the investigator. A private area where the encounter was not discernable to any observers was available for conducting the survey and obtaining BP and body weight measurement at each of the settings where data

collection took place. There were no apparent consequences to participants for a loss of privacy. The minimal risk with regards to possible loss of privacy and embarrassment are outweighed by subjects knowing their BP, whether it is being controlled, and whether there is a need for intervention. In addition, the knowledge gained by investigators with regard to social factors that are associated with cardiovascular lifestyle behaviors and BP control can be used to develop community based interventions that will reduce the disparate morbidity and mortality rates among this high-risk and vulnerable population. Steps taken to assure that the identities of subjects and their health information were protected included the study subjects being classified by ID number and only known to the research team.

In the event the depression screening questions indicated suicidal ideation, consideration for their safety was foremost. The investigator (a Master's level public health nurse) spoke further with the 21.7% of the subjects (n=101) who indicated on the PHQ-9 questionnaire *think that you would be better off dead or that you want to hurt yourself in some way*. Seventeen of these subjects reported when asked by the investigator that they were not seriously considering harming themselves and that they posed no threat to themselves or to others. Two subjects expressed that they were currently taking medication for depression, were receiving psychotherapy from a licensed practitioner, and politely declined the offer for additional resources with regards to possible harmful behaviors. The other two subjects stated that they jokingly marked this question on the depression screener but had no intent of harming themselves or others. Six of these subjects willingly accepted information and instructions on calling the San Francisco 24-hour Crisis Line (415) 758-0500 for access to behavioral health resources in

California. In addition, each subject was given a copy of the flyer with the contact information of the investigator for additional follow-up and referral if needed. The investigator was not contacted by any subjects who indicated on the depression screener suicidal ideations or the possibility of harming themselves.

Economically disadvantaged individuals may be considered vulnerable to coercion. However, the value of the stipend (e.g. \$10 gift certificate) that the subjects received for completing the survey and providing body weight and BP was minimal.

Data Management

Blood pressure awareness (Awareness of BP Questionnaire; AWBP); lifestyle behaviors (Lifestyle Behavior Questionnaire; LBQ); eating habits and exercise self-confidence (Eating Habits & Exercise Confidence Survey; EESE); SC (Social Capital Bench Mark Survey-*Short form*; SCSF); social support (Enhancing Recovery in Coronary Heart Disease Social Support Questionnaire; ESSI), chronic disease management self-confidence (Patient Education Chronic Disease Self-confidence Scale; CDSE); depressive mood (Depression Scale; PHQ); and antihypertensive medication adherence self-efficacy (Antihypertensive Medication Adherence Self-efficacy Scale; MASE) were all scored by the PI using SPSS (Statistical Package for Social Sciences) 14.0.

Statistical Analysis

The data that were collected on 208 subjects (n=208) was included in the final analysis. Statistical analysis was planned in regards to each research question.

Frequencies were obtained on all variables that were ordinal, dichotomous or categorical with SPSS 14.0 software. Mean, median, and standard deviations and ranges, minimum

and maximum values were obtained on continuous variables. Univariate and multivariate logistic regression was used to estimate the odds ratios (OR), and assess whether there was an independent relationship between the predictor variables and BP.

Descriptive statistics was used to analyze the predictor variables: awareness of BP, lifestyle behaviors, eating habits and exercise self-confidence, SC, social support, chronic disease management self-confidence, depression, and antihypertensive medication adherence self-efficacy. Pearson r was used to determine whether there was a relationship between perceptions of risk and lifestyle behaviors. Pearson r also was used to determine whether there was a relationship between covariates (e.g. sociodemographic variables) and BP. The t-test to determine whether there are differences between hypertensive subjects and non-hypertensive subjects in relation to the predictor variables, covariates, and HBP was also employed. The analysis for each of the research questions are described next.

RQ 1. What is the frequency of HBP in Black African American adults? The frequencies scores are presented in percentages.

RQ 2. Is there a relationship between BP Awareness and BP in African American adults? The relationship is represented by the Pearson product moment correlation coefficient (r).

RQ 3. Is there a relationship between Eating Habits & Exercise Self-confidence and BP in African American adults? The relationship is represented by the Pearson product moment correlation coefficient (r).

RQ 4. Is there a relationship between Lifestyle Behavior and BP in African American adults? The relationship is represented by the Pearson product moment correlation coefficient (r).

RQ 5. Is there a relationship between the SC and BP African American adults? The relationship is represented by the Pearson product moment correlation coefficient (r).

RQ 6. Is there a relationship between Social Support and BP in African American adults? The relationship is represented by the Pearson product moment correlation coefficient (r).

RQ 7. Is there a relationship between Chronic Disease Self-confidence and BP in African American adults? The relationship is represented by the Pearson product moment correlation coefficient (r).

RQ 8. Is there a relationship between Depression and BP in African American adults? The relationship is represented by the Pearson product moment correlation coefficient (r).

RQ 9. Is there a relationship between Antihypertensive Medication Adherence Self-efficacy and BP in African American adults? The relationship is represented by the Pearson product moment correlation coefficient (r).

RQ 10. Is the subset of research questions RQ2 through RQ9 independently predictive of BP in Black African American adults? The relationship is represented by odds ratios, 95% CI were calculated.

These research questions were used for conducting the data analyses. The study findings are discussed next in Chapter 5.

Chapter 5

Results

Results

Data collection took place between May and July 2009. There were 208 subjects recruited for this study. The results are described below.

Sample Characteristics

Table 5.1 gives the sociodemographic information for the sample (n=208) and for the subset of subjects who were diagnosed with HBP and reported taking antihypertensive medication prior to the study (n=120). This subset also completed the Antihypertensive Medication Adherence Self-efficacy scale of the questionnaire. The sociodemographic characteristics of the sample and the subset were similar. The majority were women and under the age of 60 years old. The ages ranged from 18 to 91 years old, with a mean age of 52.7 (\pm 12.9) for the sample (n=197) compared to 54.8 (\pm 13.1) (n=110) for the subset. Thirty-two percent were currently married; less than one third (31.0% and 27.6%) indicated that they were educated at a baccalaureate degree level or higher. Less than half of the subjects in both groups were employed (47.4% and 45.8%); 43.4% and 46.5% reported an annual income of less than \$30,000; and approximately 44.0% reported owning their home. Table 5.2 shows the sociodemographic characteristics of this sample and for the subset of Black non-Hispanic subjects in the national study by Putnam (2000). Fewer subjects in this study (Pierrie, 2011) were married (32.0% versus 38.0%) and owned their home (44.0% versus 59.0%). A higher proportion of subjects in this study was educated at a baccalaureate level or higher (31.0% versus 20.0%) and reported an annual income < \$30,000 (43.4% versus 40.0%). The BP findings in this study are described next under RQ1.

RQ 1. What are the Frequencies of HBP in Black African American Adults?

Blood pressure frequencies are reported in Table 5.3, Table 5.4, and Table 5.5.

The BP of subjects (n=208) was ascertained in four ways: (1) BP was measured

Table 5.1 Demographic Frequencies Tables

Variables	Sample (n =208)	Sample %	Subset with HBP (n= 120)	Subset with HBP %
Gender				
Men		40.4		46.7
Women		59.6		53.3
Age*	197	74.6	112	68.8
18 to < 60		25.4		31.2
≥ 60				
Marital Status	206		119	
Currently married		32.0		31.9
Never married		28.2		26.1
Not married		39.8		42.0
Education	203		116	
≥BA Degree		31.0		27.6
≤Assoc Degree		69.0		72.4
Employment	205		115	
Working (full, part-time)		47.4		45.8
Not Working**		52.6		54.2
Retired		(15.6)		(20.3)
Disabled		(10.2)		(9.3)
Unemployed		(12.2)		(10.2)
Student		(6.8)		(5.1)
Homemaker		(3.9)		(4.2)
Other		(3.9)		(5.1)
Annual HH Income			101	
< 30,000	185	43.4		46.5
≥30,000		56.6		53.5
Home Ownership			119	
Yes	205	43.9		42.9
No		56.1		57.1

*Sample: Mean Age = 52.7 (\pm 12.86); *Subset with diagnosed HBP: Mean Age = 54.8 (\pm 13.1)

**Reasons for unemployment

Table 5.2 SC Demographic Comparisons

Sociodemographic Characteristics	Pierrie ,2011 (n=208)	Putnam, 2000 (n=852) *
Covariates	%	%
Marital Status:		
• Married	32.0	38.0
• Never married	28.2	36.0
• Not married	39.8	26.0
Education:		
• < BA	69.0	80.0
• ≥ BA	31.0	20.0
Income:		
• < 30K	43.4	40.0
• 30K to < 50K	10.1	24.0
• 50K TO <75K	15.2	20.0
• 75K TO <100K	13.6	7.0
• ≥ 100K	17.7	9.0
Residence:		
• Own	43.9	59.0
• Rent	56.1	41.0

*Subjects in the national study who reported that they were Black non-Hispanic

by the investigator and is referred to as *Measured BP*; (2) by asking the question *My usual SBP and DBP is* – below normal, normal, higher than normal, and don't know; (3) *My SBP and DBP values are ___/___mmHg*; and (4) diagnosis of HBP was inferred by subjects expressing that they had been diagnosed with HBP, were currently taking antihypertensive medications, and completed the Antihypertensive Medication Adherence Self-efficacy Survey (n=120). Tables 5.3 and 5.4 show the BP frequencies of the 82.7% of subjects (n=208) who had their BP measured (n=172). High BP was defined as a SBP ≥ 140 mmHg and/or a DBP ≥ 90 mmHg. This definition showed that 33.1 % of these subjects had high SBP (20.9% Stage I and 12.2% Stage II) and 31.9% had high DBP (20.9% Stage I and 11.0% Stage II); 21.5% had high SBP and high; and 56.4% had a normal BP (<140/90 mmHg) (n=172). The average mean SBP/DBP values for the sample were 135.3mmHg (± 19.81)/ 84.7mmHg (± 12.38) (n=172) compared

to 139.1 mmHg (± 21.5)/87.0 (± 12.5) mmHg for the subset with diagnosed HBP (n=120). This indicates a higher BP in the subset with diagnosed HBP, a difference of 3.8 mmHg/ 2.3 mmHg. Table 5.5 shows that 43.6% of all subject who had their BP measured (n=172), there were nearly twice as many subjects who had measured HBP and were taking antihypertensive medication (28.5% versus 15.1%). High BP was equally distributed within the subset who were diagnosed with HBP (28.5% versus 29.1%). Data from the National Health Statistics Report (2011) indicates that BP in the subjects in this study was higher when compared to the national average (43.6% versus 37.2%), a difference of 6.4%. A higher proportion of subjects in this study were being treated for HBP (57.6% versus 25.5%), a difference of 32.1%. There also was a higher proportion of subjects in this study who had not been treated yet had HBP (15.1% versus 11.7%), a difference of 3.4%.

The first and last questions in Table 5.6 shows BP frequencies based on self-report. The first question on the survey asked *my usual BP is*- below normal, normal, higher than normal, and don't know. BP was reported normal or below normal by 56.3% (3.4% below normal and 52.9% normal) of the subjects (n=207); 33.7% reported HBP, and 10.0 % of the subjects indicated they did not know their BP. The last question of the AWBP asked subjects about their usual BP values: 76.4% indicated that SBP was normal (<140 mmHg) (n=106); 81.9% expressed that their usual DBP was normal; (<90mmHg) (n=105); 38.5% responded "Don't Know"; or the information was missing. Lastly, a preexisting diagnosis of HBP was inferred by 57.7% of the

Table 5. 3 Measured BP Frequencies by Classification (n=172)

BP Classification	Systolic BP* %	Diastolic HP** %
Optimal SBP <120mmHg DBP < 80mmHg	15.1	32.6
Normal SBP ≥120and ≤ 39mmHg DBP ≥ 80 and ≤ 89mmHg	51.7	35.5
Stage I HBP SBP ≥ 140 and ≤ 159mmHg DBP ≥ 90 and ≤ 99mmHg	20.9	20.9
Stage II HBP SBP ≥ 160mmHg DBP ≥ 100mmHg	12.2	11.0
	100	100

* Mean SBP; 135.3mmHg (± 19.81)

** Mean DBP; 84.7mmHg (± 12.38)

Table 5.4 Measured SBP & DBP Frequencies (n = 172)

Variables	High DBP %	Normal DBP %	Total
High SBP	21.5	11.6	33.1
Normal SBP	10.5	56.4	66.9
Total	32.0	68.0	100.0

subjects who reported that had been diagnosed with HBP, were currently taking antihypertensive medications, and completed the Antihypertensive Medication Adherence Self-efficacy Survey (n=208). Further statistical analysis was conducted to examine the relationship between the sociodemographic characteristics and BP. Statistically significant associations were found between measured HPB and education, income, age and education interaction, and age and income interaction for subject who were < 60 years old.

Table 5.6 and Table 5.7 show measured HBP frequencies for selected sociodemographic characteristics (gender, age, education, and income) of the

sample (n=172) and the subset with diagnosed HBP (n=120). High SBP (compared to high DBP) was more frequent in males and subjects with lower education and lower income. Approximately twice as many subjects ≥ 60 years old had high SBP compared to subjects < 60 years old (28.9% versus 54.8%). See Table 5.6. Further data analysis indicated statistically significant relationships between measured HBP and education; income; age and education interaction; and age and income interaction for subjects who were < 60 years old. See Table 5.7. These statistically significant relationships are discussed next.

Table 5.5 Measured BP Frequencies of the Sample & in Subset with Diagnosed HBP (n=172)

Measured BP	Sample	Subset with Diagnosed HBP	Totals
HBP – no	27.3%	29.1%	56.4%
HBP – yes	15.1%	28.5%	43.6%
Totals	42.4%	57.6%	100%

Table 5.6 Sample Characteristics & Measured HBP Frequencies (n=172)

Variables	n	High SBP %	High DBP %	Normal SBP of DBP * %	Total %
Gender:					
Male	69	40.6	40.6	18.8	100.0
Female	103	28.2	26.2	45.6	
Age:					
< 60 years	119	28.9	33.6	37.5	100.0
≥ 60 years	42	54.8	26.2	19.0	
Education:					
\leq Associate Degree	123	36.6	33.3	30.1	100.0
\geq Bachelor Degree	46	23.9	28.3	47.8	
Income:					
$< 30,000$	77	33.8	28.6	37.6	100.0
$\geq 30,000$	66	28.8	25.8	45.4	

* ($< 140/90$ mmHg)

Table 5.7 Sociodemographic Characteristics of Subset & Measured HBP Frequencies (n=99)

Variables	n	High SBP %	High DBP %	Controlled SBP or DBP * %	Total %
Gender:					
Male	46	43.5	41.3	15.2	100.0
Female	53	39.6	32.1	28.3	
Age:					
< 60 years	63	34.9	39.7	25.4	100.0
> 60 years	28	57.1	32.4	10.5	
Education:					
< Associate Degree	74	44.6	30.4	25.0	100.0
> Bachelor Degree	23	35.1	30.4	34.5	
Income:					
< 30,000	44	43.2	36.4	20.4	100.0
> 30,000	37	35.1	35.1	29.8	

(<140/90 mmHg)

The relationship between measured HBP and education was statistically significant (OR = 0.08; 95% CI 0.01, 0.80); subjects < 60 years old with lower education were 92.0% less like to have lower BP. The relationship between measured HBP and low income was statistically significant (OR = 0.1; 95% CI 0.01, 0.75); subjects < 60 years old with lower income were 90.0% less likely to have lower BP. Measured BP and age and low education interaction was statistically significant (OR = 11.1; 95% CI 2.03, 60.69); when there is an age and education interaction in the younger subjects (<60 years old) those with lower education are 11 times more like to have HBP compared to younger subjects when there was no age and education interaction. Last, there was a statistically significant relationship between the age and income interaction and measured HBP (OR = 5.5; 95% CI 1.3, 26.5); when there is an age and income interaction in the younger age group, the subjects with lower income are nearly six times

more likely to have HBP compared to younger subjects when there is no age and income interaction. BP awareness is discussed in the next section, RQ2.

RQ 2. Is there a relationship between BP Awareness and BP values in African American Adults?

Table 5.8 shows AWBP frequencies. There were statistically significant differences with regard to subjects' reporting that their BP was either "normal" or "high" and the BP values (mmHg) that subjects reported. Statistically significant differences were also reflected in the subjects' reported BP values (mmHg) and the BP values that were measured by the investigator. These statistically significant associations are discussed following a description of the average mean BP awareness scores and BP awareness frequencies. The median cutpoint value for higher levels of BP awareness was 20.0. Average mean BP awareness scores were 19.1 (± 4.4) in the sample (n=208) and 19.5 (± 4.2) in the subset diagnosed with HBP (n=120). Table 5.8 shows that approximately 58.0% reported correctly that HBP is not part of normal aging; 27.7% knew that the top number (SBP) is not the only indicator of HBP; and 34.1% knew that same relationship did not hold true for DBP. The highest proportions of BP awareness were for the statements *HBP is a serious health problem* (94.2%) and *HBP can be controlled* (96.6%). A high proportion of subjects also recognized that HBP can lead to a high incidence of CHD (84.9%), stroke (89.2%), and kidney failure (67.5%). Approximately 63.0% agreed medication is not the only method for controlling HBP; 88.4% recognized that *physical activity can help keep BP in the normal range*; and most importantly 94.2% were aware that *reducing sodium*

Table 5.8 BP Awareness Frequencies

Questions	Responses	
	Often/Always %	Sometimes/Never %
My usual Blood Pressure is (n= 207)	%	
Below -	3.4	
Normal -	52.9	
High -	33.7	
Don't Know	10.0	
I ask my doctor or nurse what my BP is when they check it (n=207)	73.9	26.1
I discuss my BP with my doctor or nurse	57.2	42.8
High Blood Pressure is part of normal aging (n=206)	Disagree 58.2	Agree/Don't Know 41.8
BP is high when only top number (SBP) is at or over 140 mmHg (n=206)	27.7	72.3
BP is high when only the bottom number (DBP) is at, or over 90 mm Hg (n=206)	34.0	66.0
HBP can only be controlled with medication (n=205)	63.4	36.6
Three drinks of alcohol per day lowers BP (n=207)	68.1	31.9
-----	-----	-----
Physical activity helps keep BP in the normal range (n=207)	Agree 88.4	Disagree/ Don't Know 11.6
HBP is a serious condition (n=206)	94.2	5.8
High Blood Pressure can be controlled (n=206)	96.6	3.4
Hypertension is medical term for HBP	82.2	17.8

Among older persons, top number (SBP) is especially important to predict HD, stroke & death	58.2	41.8
The goal of lowering BP is to reduce chances of developing heart disease, kidney failure, or stroke (n=207)	90.3	9.7
Reducing sodium (salt) intake is helpful to lower BP (n=207)	94.2	5.8
People with HBP have two-to-three-fold greater risk of hf than those with normal BP (n=203)	77.3	22.7

Untreated HBP can lead to the following:	No	No/Don't Know
Alzheimer (n=199)	30.7	68.3
Osteoporosis (n=1950)	27.7	72.3

	Yes	No/Don't Know
Heart Disease (n=205)	84.9	15.1
Stroke (n=203)	89.2	10.9
Kidney Failure (n=203)	67.5	32.5
My usual BP value is ___/___		
Reported a SBP <140 mmHg (n=106)	76.4	
Reported a DBP < 90 mmHg (n=105)	81.9	
Don't Know/Missing	38.5	

(salt) intake is helpful to lowering BP. The statistically significant associations with regard to reported BP status and BP values are discussed next.

The t-test was used to compare responses to the question *my usual BP is* below normal, normal, or high and the question *my usual BP values are* (___/___ mmHg). Of the subjects who reported that their usual BP was high, there was a

reported mean SBP of 135.1 mmHg (\pm 14.8) (n=45). Of the subjects who reported their SBP was below normal or normal, there was a reported mean SBP of 123.4mmHg (\pm 23.0) (n=56); a mean difference in SBP of 11.7 mmHg (\pm 3.96) ($p < 0.01$). Of the subjects who reported their DBP value was high, there was a reported mean DBP of 83.7mmHg (\pm 17.8). For subjects who indicated their BP value was below normal or normal, the reported mean DBP was 73.1mmHg (\pm 14.6); a mean difference of 10.6 mmHg (\pm 3.24) ($p < 0.01$).

A t-test also was used to compare measured BP and the subjects' reported SBP and DBP values on the last question of the AWBP survey. See Table 5.6. There were statistically significant differences between self-reported and measured SBP values, 9.3 (\pm 3.9) with ($p < 0.02$) and self-reported and measured DBP values; 8.80 (\pm 3.7) with ($p < 0.02$). The findings for eating habits and exercise self-confidence are discussed in the next section, RQ 3.

RQ 3. Is there a relationship between Eating Habits & Exercise Self-confidence and BP in African American Adults?

Table 5.9 presents the frequencies that inform us about eating habits and exercise self-confidence. There were no statistically significant relationships between eating habits/exercise self-confidence and BP. The proportion of responses on survey questions varied substantially with regard to motivating one's self to consistently eat 'heart-healthy' foods for at least six months. These percentages ranged from as low as 53.0% for confidence to "eat unsalted, unbuttered popcorn," to as high as 80.3% for "add less salt than the recipe calls for". Most of the mean scores on the eating and

exercise self-confidence subscales indicated moderate self-confidence for the sample and for the subset diagnosed with HBP. The exception was the high level of self-confidence on the eating subscale (reduce salt intake) for the sample, 4.0 (\pm .09) (n=205) and the high level of self-confidence on the exercise subscale (stick to it) for the subset, 3.6 (\pm 0.9) (n=119).

Table 5.9 Eating Habits & Exercise Confidence Frequencies

	n	Can ^a	Cannot ^b
Eating Habits Confidence		%	%
Stick to your low fat, low salt foods when you feel depressed, board, or tense	206	54.4	45.6
Stick to your low fat, low salt foods when there is high fat high salt food readily available at a party	206	55.3	44.7
Stick to your low fat, low salt foods when dining with friends or co-workers	204	55.4	44.6
Stick to your low fat, low salt foods when the only snack close by is available from a vending machine	204	57.4	42.6
Stick to your low fat, low salt foods when you are alone, and there is no one to watch you	201	60.2	39.8
Eat smaller portions at dinner	201	65.7	34.3
Cook smaller portions so there are no leftovers	200	64.5	35.5
Eat lunch as your main meal of the day, rather than dinner	201	60.2	39.8
Eat smaller portions of food at a party	201	67.2	32.8
Add less salt than the recipe calls for	203	80.3	19.7
Eat unsalted peanuts, chips, crackers, & pretzels	202	62.9	37.1
Avoid adding salt at the table	205	69.8	30.2
Eat unsalted, unbuttered popcorn	202	53.0	47.0

Keep the salt shaker off the kitchen table	205	70.2	29.8
Eat meatless (vegetarian) entrees for dinner	202	53.5	46.5
Substitute low or non-fat milk for whole milk at dinner	199	74.9	25.1
Cut down on gravies & cream sauces	197	71.6	28.7
Eat poultry & fish instead of red meat at dinner	199	78.9	21.1
Avoid ordering red meat (beef, pork, ham, lamb) at restaurant	200	66.5	33.5
Exercise Confidence	n	Can ^a	Cannot ^b
Get up early, even on weekends, to exercise	204	63.7	36.3
Stick to your exercise program after a long, tiring day at work	204	52.5	47.5
Exercise even though you are feeling depressed	202	56.9	43.1
Set aside time for a physical activity program (e.g. walking, jogging, swimming, biking, or other continuous activities for at least 30 minutes, 3 times per week)	203	67.0	33.0
Continue to exercise with others even though they seem too fast or too slow for you	201	67.7	32.3
Stick to your exercise program when undergoing a stressful life change (e.g. divorce, death in the family, moving)	202	56.4	43.6
Attend a party only after exercising	197	53.8	46.2
Stick to your exercise program when your family is demanding more time from you	202	50.7	49.3
Stick to your exercise program even when you have household chores to attend to	202	61.4	38.6
Stick to your exercise program even when you have excessive demands at work	201	56.7	43.3
Stick to your exercise program when social obligations are very time consuming	203	55.2	44.8
Read or study less in order to exercise more	202	48.0	52.0

^a Includes "I know I can" and "Pretty sure I can"

^b Includes "Maybe I can", "Pretty sure I cannot", and "I know I cannot"

Table 5.9 Eating Habits & Exercise Confidence Mean Differences

	Mean (SD)	Minimum – Maximum Scores	
Exercise Subscale 1 Stick to it	3.66 (\pm 0.94)	1.00	5.00
Exercise Subscale 2 Make time	3.68 (\pm 0.89)	1.00	5.00
Eating Subscale 1 Stick to diet	3.66 (\pm 0.93)	1.00	5.00
Eating Subscale 2 Reduce caloric intake	3.84 (\pm 0.89)	1.00	5.00
Eating Subscale 3 Reduce salt intake	3.97 (\pm 0.92)	1.00	5.00
Eating Subscale 4 Reduce fat	3.99 (\pm 0.88)	1.00	5.00

Min: 1.0 to Max

Table 5.10 Eating Habits & Exercise Self-confidence Frequencies & Mean Scores

Subscales	n	Sample (n=208) %	Mean (\pm sd)	Median	n	Subset HBP (n=120) %	Mean (\pm sd)	Median
Exercise 1	204	50.5	3.7 (\pm 0.9)	3.8	119	52.9	3.6 (\pm 0.9) *	3.6
Exercise 2	204	56.4	3.7 (\pm 0.9)	3.8	119	54.6	3.7 (\pm 0.8)	3.8
Eating 1	206	51.5	3.7 (\pm 0.9)	3.8	119	50.4	3.6 (\pm 0.9)	3.8
Eating 2	206	52.7	3.8 (\pm 0.9)	4.0	119	50.4	3.8 (\pm 0.8)	4.0
Eating 3	205	61.0	4.0 (\pm 0.9) *	4.0	118	53.4	4.0 (\pm 0.9)	4.2
Eating 4	202	46.1	4.0 (\pm 0.9)	4.2	118	50.8	4.0 (\pm 0.8)	4.2

* High level of self-confidence

See Table 5. 10. Study findings associated with lifestyle behaviors are described next under RQ 4.

RQ 4. Is there a relationship between Lifestyle Behavior and BP in African American Adults?

Table 5.11 shows the lifestyle behavior frequencies. There were no statistically significant relationships between BP and lifestyle behaviors. On the LBQ Health subscale, 54.4% reported eating 3 meals a day and 60.6% had 3-4 serving of fruits and vegetables per day. More than half acknowledged reading

food labels (53.4%) and approximately 45.0% expressed that they could “avoid cooking food in oil, lard, and butter”. To the question “walking for 20- 30 minutes three times a week”, “and exercise for 20-30- minutes at home” about 60% and 43.2%, respectively, endorsed those two questions.

On the LBQ Smoke subscale, the proportions were higher with regard to exposure to second-hand smoke 80.5% did not *allow family or friends to smoke in their cars* and 75.6% did not *allow family to smoke in their home*. However, 69.6% admitted to *smoking at least one cigarette each day* and 67.3% reported smoking or using tobacco. The cutpoint value for healthy eating, exercise, and stress management (LQB Health) was 18.0 and 14.0 for the LBQ Smoke subscale. The mean scores on LBQ Health for the sample (n=172) and the subset (n=102) were similar; 18.4 (± 4.3) .0 and 18.1 (± 4.3), respectively. The mean scores were also similar on LBQ Smoke for both groups; 13.9 (± 3.2) (n=172) and 59.2%, 14.9 (± 2.9) (n=102). The findings on SC are discussed next under RQ 5.

RQ 5. Is there a relationship between Social Capital and BP in African American Adults?

Table 5.12 shows the SC frequencies for the SCSF survey questions; Table 5.13 shows frequencies for this sample and for Black (non-Hispanic) subjects in Putnam (2000); and Table 5.14 shows frequencies for the dimensions of SC and average mean scores for this sample. There were statistically significant relationships between measured HBP and bonding SC for subjects < 60 years old; and between measured HBP and bonding SC, bridging SC, and linking SC for subjects \geq 60 years old. First, the frequencies in Table 5.12, Table 5.13, and Table 5.14 will be discussed. The statistically significant relationships

between measured HBP and the three types of SC (bonding, bridging, and linking) are discussed last.

Table 5.11 Lifestyle Behavior Frequencies (n=208)

Survey Questions	Regular/Often	Sometime/Never
LBQ Health		
Eat 3 meals a day (breakfast, lunch, dinner) (n=206)	54.4	45.6
Eat 3-5 servings of fruits and vegetables a day (n=208)	60.6	39.4
Read labels to see what is in the foods before buying. day (n=208)	53.4	46.6
Avoid cooking foods in oil, lard, or butter. (n=208)	44.7	55.3
Walk for 20-30 minutes at least 3 times per week. (n=207)	59.9	40.1
Exercise for 20-30 minutes at home least 3 times per week. (n=206)	43.2	56.8
Engage in yoga, exercise, meditation, or use other means for the purpose of managing stress. (n=202)	36.6	64.4
LBQ Smoke		
Smoke or use tobacco products. (n=205)	32.7	67.3
Smoke at least 1 cigarette each day. (n=204)	30.4	69.6
Allow family to smoke in my home. (n=205)	24.4	75.6
Allow family or friends to smoke in my car (n=205)	19.5	80.5

(a) Scoring options 1 thru 4. Options 1 & 2 = optimal

(b) Scoring options 1 thru 4; Options 3 & 4 = optimal

One of the SC dimensions (volunteerism) had an ICR < 0.70 and, therefore, did not meet the inclusion criteria for further statistical analysis. Table 5.12 shows that the highest proportions were on the political participation and social trust dimensions.

Table 5.12 Social Capital Frequencies (n = 208)

Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people? (n=206)	Can be Trusted	Can't be too Careful/ Not sure
	30.1	69.9
Of the groups listed below, would you say that in general you can trust them a lot, some, only a little, or not at all?	Trust a lot/some	Trust little, not at all, not sure
People in Your Neighborhood (n=181)	67.4	32.6
Local Police (n=191)	69.6	30.4
People in stores where you shop (n=186)	68.8	31.2
White People (n=194)	68.6	31.4
African Americans/Blacks (n=197)	78.7	21.3
Hispanics/Latinos (n=185)	70.3	29.7
How interested are you in politics and national affairs? (n=200)		
Very/somewhat	83.5	
Slightly, Not at all, Not sure	16.5	
Are you currently registered to vote? (n=203)		
Yes	91.5	
Did you vote in the presidential election in 2004 when Senator John Kerry ran against George Bush (n=195)		
Yes	78.5	
Did you vote in the last presidential election in 2008 when Senator John McCain ran against Senator Barack Obama? (n=194)		
Yes	88.7	
Did you vote for any of the California (state) propositions or San Francisco (local) initiatives that were included on the election ballot in 2008? (n=192)		
Yes	76.6	
How much of the time do you think you can trust the NATIONAL government (n=198)		
Just about always/most of the time	26.6	
Some of the time, Hardly ever, Not sure	73.3	
How much of the time do you think you can trust your Local government (n=195)		
Just about always/most of the time	22.6	
Some of the time, Hardly ever, Not sure	77.4	

How would you describe your political/social outlook

(n=189)

Very or Moderately Liberal	41.8
Middle of the Road	28.6
Moderately or very Conservative	24.3
Something Else/Not sure	5.3

How many times in the last 12 months have you donated blood (n=208)

Not at all	88.2
Once or Twice	7.7
Three-Four	4.1
Once a month or less	

How many times in the last 12 months have you:**-Worked on Community Project** (n=194)

About once a week or more	19.6
Once or twice a month	19.6
5-9 times	9.3
2-4 times	17.5
Once	9.3
Never	27.4

-Attended public town/school meetings (n=196)

About once a week or more	6.6
Once or twice a month	18.4
5-9 times	5.6
2-4 times	12.8
Once	16.3
Never	40.3

-Attended political meeting/rally (n=193)

About once a week or more	4.1
Once or twice a month	11.9
5-9 times	10.9
2-4 times	19.7
Once	47.2
Never	

-Attended any club/organizational meeting (n=194)

About once a week or more	10.8
Once or twice a month	24.2
5-9 times	7.7
2-4 times	15.5
Once	9.8
Never	32.0

-Had friend over to your home (n=196)

About once a week or more	21.9
Once or twice a month	35.3
5-9 times	12.2
2-4 times	5.3
Once	5.1
Never	10.2

-In home of friend of different race or had them in your home (n=192)		
h e	About once a week or more	19.8
	Once or twice a month	21.9
	5-9 times	7.3
	2-4 times	20.7
	Once	12.5
	Never	18.8
-Been in home of someone of different neighborhood or had them in your Home (n=190)		
p r o	About once a week or more	15.8
	Once or twice a month	21.5
	5-9 times	13.2
	2-4 times	20.5
	Once	13.2
	Never	15.8
-Been in home of someone you consider a community leader or in their home (n=188)		
p o r t i	About once a week or more	7.4
	Once or twice a month	9.6
	5-9 times	3.7
	2-4 times	10.6
	Once	16.0
	Never	52.7
-Volunteered (n=193)		
o n s	About once a week or more	23.8
	Once or twice a month	14.0
	5-9 times	13.0
	2-4 times	17.1
	Once	8.8
	Never	23.3
Are you a member of a local church, synagogue, or religious/spiritual community (n=188)		
f	Yes	73.4
In past 12 months have you participated in church activities other than services (n=184)		
r	Yes	62.0
How often do you attend religious services not including weddings or funeral (n=188)		
p o	Almost every week or more	62.2
	Once or twice a month	5.9
	Few times a year	16.0
	Less than that	16.0

The proportions for political participation (linking SC) were as follows: 91.5% reported they were “registered to vote”; 88.7% voted in the 2008 presidential election; 83.5% endorsed a high interest in politics and national affairs; 78.5% voted in the 2004 presidential election; more than three-quarters of the subjects (76.6%) voted for a California State proposition or a local initiative in the 2008 election. Further, 41.8% described themselves as *moderately liberal or very liberal* compared to 24.3% who reported they were *moderately or very conservative*. With regard to social trust: 78.7% expressed that they had ‘a lot or some’ trust for African Americans/Blacks (bonding SC); 70.3% for Latinos (bridging SC); 69.6% for local police (linking SC); 68.8% for “people in stores where you shop” (bridging SC); 68.6% for White people; and 67.4% for “people in your neighborhood” (bridging SC), respectively. The lowest percentages for social trust were across the societal gradient (linking SC) and included 26.8% who reported “trust in national government” and 22.6% for “trust in local government”. On the faith-based engagement dimension (bonding SC), 73.4% reported being a *member of a local church, synagogue, or religious/spiritual community*; and 62.0% reported that they *participated in church activities other than services during the past 12 months*. Less than 12.0% donated blood in the last 12 month; while half (50.8%) reported that they had volunteered five to nine or more times during the past year. For civic participation, 70% reported they had a friend over to their home, 49.0% visited the home of a friend of a different race or had them in their home; 42.7% attended a club or organizational meeting five

to nine or more times during the past year; and 30.6% attended a public meeting to discuss town or school affairs.

Compared to Putnam (2000), the findings in this study indicated a higher level of trust in African Americans (76.0% versus 78.7%); trust in Latinos (70.3% versus 68.0); trust in the police (69.6% versus 66.0%); trust in people in their neighborhood (67.4% versus 61.0%); and general trust in people (30.1% versus 27.0%) for these selected questions. See Table 5.13. There were higher proportions in the national sample who reported having a friend visit their home (18.4% versus 15.0%) and similar for having a friend of a different race in their home (14.0% versus 13.7%). There was a greater proportion of faith-based engagement among the subjects in this study. A greater proportion of subjects in this study were members of a church or religious community (73.4% versus 71.0%); attended churches services regularly (62.2% versus 55.0%); and participated in other church activities (62.0% versus 52.0%). Political participation and civic engagement were higher in this sample with regard to being registered to vote (91.5% versus 81.0%); voted in the most recent presidential election (88.7% versus 68.0%); and who had attended a political rally in the past year (52.8% versus 17.0%). When it came to political ideology, this sample was more liberal (70.4% versus 54.0%). However, more people in the national study indicated that they trusted local government (31.0% versus 22.6%) and the national government (29.0% versus 26.8%).

The average mean scores for the dimensions of SC are presented in Table 5.14 and include percentages for the sample (n=208) and the subset diagnosed

with HBP (n=120). The average mean scores equal to and greater than the median cutpoint values are reflective of higher levels of SC (*). The proportions with high SC average mean scores were similar for both groups: informal social ties (81.0% and 79.1%); informal social ties and engagement (76.4% and 72.2%); faith-based engagement (54.7% and 50.9%); and trust in government (51.3% and 46.4%), respectively. See Table 5.14.

Table 5.13 Comparison of SC Dimensions & Survey Questions

SCSF	Pierrie ,2011 n=208	Putnam , 2000 n=501
SC Dimensions	%	%
Social Trust Index	24.9	38.0
Interracial Trust Index	60.8	65.0
Faith-Based Index	54.7	79.0
SC Survey Questions		
Most People Can be Trusted	30.1	27.0
Trust People in Neighborhood	67.4	61.0
Trust Local Police	69.6	66.0
Trust White People	68.6	77.0
Trust African Americans	78.7	76.0
Trust Latinos	70.3	68.0
Trust National Government	26.8	29.0
Trust Local Government	22.6	31.0
Registered to Vote	91.5	81.0
Voted in Presidential Election	78.5 / 88.7	68.0
Political Ideology:		
Liberal/Very Liberal	41.8	33.0
Middle-of-the-Road	28.6	21.0
Conservative/Very	24.3	46.0
Something else	5.3	1.0
Attended Political Rally	52.8	17.0
*Attended Public Meeting to Discussed School Affairs	10.0	3.2
*Had Friends over to Your Home	15.0	18.4
*Had Friend of Different Race in Your Home	13.7	14.0
Worked on Community Project	72.6	33.0
Donated Blood	11.8	15.0
Member of Church or Religious Community	73.4	71.0
Attend Religious Services - Almost every week of more	62.2	55.0
Participate in Church Activities Not including weddings/funerals	62.0	52.0

There was a statistically significant relationship between bonding SC and measured HBP for subjects < 60 years old (OR = 2.46; 95% CI 1.21, 4.9); for each unit increase in bonding SC there is a 2.5 times increase in BP for subjects < 60 years old. There also were statically significant relationships between measured HBP and bonding SC, bridging SC, and linking SC for subjects \geq 60 years old: bonding SC (OR = 0.3; 95% CI 0.1, 0.9); for each unit increase in bonding SC these subjects were 75.0% less likely to

Table 5.14 Dimensions of SC Frequencies & Mean Scores

SC Dimensions	n	Sample (n=208) %	Mean (\pm sd)	Median	n	Subset (n= 120) %	Mean (\pm sd)	Median
Social Trust	189	56.6	2.6 (\pm 0.5) ^a	2.6	110	57.3	2.6 (\pm 0.5) ^a	2.6
Interracial Trust	194	60.8	2.8 (\pm 0.6) ^a	3.0	111	63.1	2.8 (\pm 0.6) ^a	3.0
Trust in Government*	200	51.3	2.1 (\pm 0.6) ^a	2.0	115	46.4	2.1 (\pm 0.6) ^a	2.0
Political Participation	195	49.1	2.8 (\pm 0.4) [®]	3.0	112	48.2	2.8 (\pm 0.4) [®]	3.0
Civic Participation *	195	54.9	3.2 (\pm 1.7) [±]	3.0	112	49.5	3.1 (\pm 1.8) [±]	2.8
Informal Social Ties*	191	81.0	3.8 (\pm 1.7) [±]	3.7	110	79.1	3.7 (\pm 1.7) [±]	3.3
Informal Social Ties & Engagement *	193	76.4	4.2 (\pm 1.9) [±]	4.0	111	72.2	4.1 (\pm 1.8) [±]	3.7
Faith-base Engagement	192	54.7	1.7 (\pm 0.4) ^β	2.0	110	50.9	1.6 (\pm 0.4) ^β	2.0

^a Range: 1.0 – 4.0; [±] Range: 1.0 – 8.0; [®] Range: 1.0 – 3.0; ^β Range: 1.0 – 2.0

*High SC

have an increase in BP; bridging SC (OR = 0.5; 95% CI 0.3, 0.9); for each unit increase in bridging SC these subjects are 50% less likely to have an increase in BP; and linking SC (OR= 0.3, 95% CI 0.1, 0.9); for each unit increase in linking SC these subjects are 70.0% less likely to have an increase in BP. The findings associated with social support are presented next under RQ 6

RQ 6. Is there a relationship between Social Support and BP in African American Adults?

Social support frequencies are presented in Table 5.15. There were no statistically significant associations between BP and social support. Almost three-fourths of the subjects (48.5 % and 24.3 %) indicated that they receive social support “most” or “all of the time” (n=206). There were 72.8% (48.5% and 24.3%) who had someone to listen when they needed to talk; 71.5% (44.4% and 27.1%) reported that there is *someone available to give good advice about problems* (n=207); 70.0% (51.2% and 18.8%) reported there is *someone available who shows you love and affection* (n=207); 67.0% (44.3% and 22.7%) indicated that there is *someone to provide emotional support and help with decision* (n=203); 66.3% (41.1% and 25.2%) *have enough contact with someone they trust and confide in* (n=202); and the lowest proportion was 47.4% (30.0% and 17.4%) for the subjects who reported *someone available to help with daily chores* (n=207). The scores on this instrument ranged from 5 to 25. The average mean score was 21.0 (± 5.0). Higher scores indicated more social support. Approximately 50.0% of the sample had higher levels of social support. The findings associated with chronic disease self-confidence are discussed next.

Chronic Disease Management Self-confidence Findings

RQ 7. Is there a relationship between Chronic Disease Management Self-confidence and BP in African American Adults?

Chronic disease management self-confidence frequencies are reported in Table 5.16. There were statically significant associations between chronic disease management self-confidence and diagnosed HBP. The scores for the response options ranged between 1 and 10; with lower scores indicating higher self-

Table 5.15 Social Support Frequencies (n= 208)

Survey Questions	Responses %			
	All the time	Most of time	Some of time	Little of time
None of time Is there someone available to you whom you can count on to listen to you when you need to talk (n=206)	48.5	24.3	18.4	6.3
Someone available to give good advice about problem (n=207)	44.4	27.1	20.8	5.3
Someone available who shows you love & affection (n=207)	51.2	18.8	19.8	5.3
Someone available to help with daily chores (n=207)	30.0	17.4	21.3	15.0
Someone to provide emotional support – help with decisions (n=203)	44.3	22.7	21.2	6.4
Do you have enough contact with someone you trust and confide in (N=202)	41.1	25.2	20.3	7.9
Currently married or living with partner (N=202)	Yes = 53.0		No = 47.0	
ESSI: mean 19.7 (+5.0)				

-confidence. Most subjects' indicated high self-confidence in their ability to judge when health changes indicate the need to see an MD (64.5%); discuss personal problems with an MD (64.2%); ask an MD things about illness concerns (64.0%); manage disease and reduce the need to see an MD (60.7%); and do things other than take medications to reduce effect of illness (60.1%). At the other end of the continuum, the subjects indicated the least confidence in their ability to get support with daily tasks other than from family or friends (28.0%), get family and friends to help with things you need such as household chores, shopping, cooking, transportation (22.2%), get emotional support from resources

other than family/friends (21.5%); and confidence in getting information about a disease or illness from community resources (18.7%).

The response items were reversed prior to the statistical analysis (1 = not at all confident and 10 = totally confident), whereby, higher mean scores indicate higher self-confidence. The average mean scores on the four subscales for the sample compared to the subjects who were diagnosed with HBP were as follows: *Get information on disease*, 6.8 (± 2.9) (n=203) compared to 6.4 (± 2.9) (n=117); *Obtain help from community, family or friends*, 4.5 (± 2.6) (n=204) compared to 6.3 (± 2.5) (n=117); *Communication with physicians*, 7.4 (± 3.0) (n=201) compared to 7.3 (± 3.0) (n=113); and *Manage disease in general*, 7.3 (± 2.6) (n=201) compared to 6.9 (± 2.6) (n=114). There was a statistically significant relationship between diagnosed HBP and the chronic disease self-management subscale *How confident are you that you can get information about your disease from community resources?* The mean was 4.6 (± 2.9) for the subjects who had been diagnosed with HBP (n=120) and 3.5 (± 2.9) for subjects without a HBP diagnoses ($p < .05$). Also, there was a statistically significant difference on the subscale *confidence in managing disease in general* and diagnosed HBP. The mean was 4.0 (± 2.6) for subjects diagnosed with HBP compared to 3.3 (± 2.6) for those who had no HBP diagnosis, ($p < .05$). The findings on depression are discussed next.

Depression Screener Findings

RQ 8. Is there a relationship between Depression and BP in African American Adults?

Frequencies for depression are presented in Table 5.17. There were no statistically significant relationships between BP and depression. Overall, the scores suggested that 61.1% of the subjects experienced no depression or minimal depression; 19.7% mild depression; 11.4% moderate depression; and 7.8%

Table 5.16 Chronic Disease Self-confidence Frequencies (n = 208)

Survey Questions	n	Response Items %									
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
How confident are you that you can get information about a disease/ illness from community resources?	203	27.6	10.8	9.4	7.4	14.8	5.9	5.4	7.4	3.9	7.4
Confident you can get family and friends to help you with the things you need (hh chores, shop, cook, transp)	203	23.6	9.4	16.3	7.4	13.3	4.4	3.4	8.9	3.9	9.4
Confident in getting emotional support from friends/family (i.e. listen/talk problems)	204	29.9	17.6	10.3	5.9	8.8	4.4	4.4	6.4	3.9	8.3
Confident in getting emotional support From resources other than family/ friends	204	19.6	10.8	11.8	6.9	13.2	9.3	6.9	7.8	4.4	9.3
Confident in getting support with daily tasks o/t from family/friends	204	13.7	14.2	14.2	4.9	11.8	6.4	6.9	11.3	5.4	11.3
Confident you can ask MD things about illness concerns	200	44.0	12.0	8.0	4.0	8.5	2.5	4.0	4.0	2.5	10.5
Confident you can discuss personal problems with MD	201	42.3	12.9	9.0	4.5	7.0	1.5	5.5	5.0	2.0	10.4
Confident you can work out differences with MD	199	31.7	18.1	8.5	6.5	7.0	5.5	4.0	5.5	4.5	8.5
Confident you can self-manage your condition on a regular basis	197	24.9	17.8	14.2	9.1	8.6	6.6	4.6	3.6	3.6	7.1
Confident in ability to judge when health changes indicate need to see MD	197	31.0	24.9	8.6	5.1	8.1	1.5	3.6	7.1	2.5	7.6
Confident in ability to manage dz & reduce need to see MD	201	9.9	17.9	12.9	10.4	8.0	2.0	6.0	3.5	4.5	5.0
Confident you can reduce emotional distress so illness does not affect everyday life	201	20.4	18.9	13.9	11.4	11.9	6.0	5.0	4.5	3.5	4.5
Confident you can do things o/t take medication to reduce effect of illness	201	30.3	15.9	13.9	5.5	10.4	2.5	4.5	7.5	4.0	5.5

Totally confident – 1 Not at All – 10

moderately severe to severe depression. Higher scores indicated more signs of depression. The average mean depression score for the total sample compared to the subjects who had been diagnosed with HBP was 4.5 (± 5.9) (n=193) compared

to 5.0 (± 6.0) (n=112). The depression screener, PHQ-2, contains two questions: *Over the last 2 week, how often have you been bothered by any of the following problems.* Subjects reported that they experienced *little interest or pleasure in doing things* (45.6%) or *feeling down, depressed, or hopeless* (39.8) by selecting the response option *several days, more than half the days, or nearly every day.* These responses inferred possible signs of depression and subjects should complete the remaining seven questions. The frequencies of the depression screener suggested that 21.7% of the subjects (n=101) had considered harming themselves. During the follow-up assessment of the subjects who provided these responses, only two of the subjects expressed that they had seriously considered personal harm and or their demise. One of the subjects was a health professional with whom the investigator reviewed referral options. The other subject was receiving behavioral therapy and pharmacologic interventions expressed that things were 'okay'. Discussion of the antihypertensive medication self-efficacy findings are discussed next.

Antihypertensive Medication Adherence Self-efficacy Findings

RQ 9. Is there a relationship between Antihypertensive Medication Adherence Self-efficacy and BP in African American Adults?

Table 5.17 Depression Screener Frequencies

Survey Questions	(n)	Response %			
		Not at all	Several days	More than half the days	Nearly every day
Over the last 2 weeks, how often have you been bothered by any of the following problems?					
Little interest or pleasure in doing things.	206	54.4	26.7	11.7	7.3
Feeling down, depressed, or hopeless	206	60.2	25.2	9.2	5.3
Trouble falling asleep, staying asleep, or sleeping too much.	98	23.5	38.8	17.3	20.4
Feeling tired or having little energy.	100	17.0	50.0	20.0	13.0
Poor appetite or overeating.	100	32.0	30.0	25.0	13.0
Feeling bad about yourself, that you are a failure or that you have let yourself or family down.	100	28.0	33.0	17.0	12.0
Trouble concentrating on things such as reading the newspaper or watching tv.	101	52.5	29.7	11.9	5.9
Moving or speaking so slowly that other people could have noticed. Or being fidgety or restless that you have been moving around a lot more than usual.	101	67.3	19.8	8.9	4.0
Thinking that you would be better off dead or that you want to hurt yourself in some way.	101	78.3	8.9	6.9	5.9

The frequencies for the antihypertensive medication adherence self-associations between antihypertensive medication adherence and BP. efficacy scale are presented in Table 5.18. There were no statistically significant between BP and antihypertensive medication adherence self-efficacy

Approximately 58.0% of the subjects (n=208) completed this questionnaire, thereby, indicating a prior HBP diagnosis and currently taking antihypertensive medications (n=120). The range in frequency scores were as low as 53.0% for “*very sure you can take your BP medication all of the time when*

you are afraid they affect sexual performance (23.0% of these respondents were men) (n=117); and as high as 78.3% for *make taking your medication part of your routine* (n=115). High medication adherence self-efficacy percentages were also reported on the following questions: (1) *when you are with family members* (75.8%) (n =120); (2) *always remember to take your BP medication* (73.9%) (n=115); (4) *when you are traveling* (73.7%) (n=118); and (5) 73.1% *when you feel well* (n=119). Table 5.25 indicates an equal proportion of measured HBP and measured normal BP for the subset with diagnosed HBP; 28.5% and 29.1% (n=99), respectively.

The findings on the antihypertensive medication adherence self-confidence scale indicated that men had lower levels of confidence in taking medication when it was associated with side effects. Compared to women, the men in the sample were less confidence in their ability to take antihypertensive medication if it resulted in dizziness (18.8% versus 24.8%), being tired (23.7% versus 32.2%), increased urination (26.5% versus 33.3%) and if it affected sexual performance (23.7% versus 29.9%). There also was less confidence among the men when the medication cost a lot of money (23.5% versus 31.1%). Only 23.0% of the men (compared to 30.5% of women) reported a high level of confidence in taking antihypertensive medication when they were afraid of becoming dependent on the medication. These figures suggest that the women in this sample had higher levels of confidence with regard to taking antihypertensive medications.

Table 5.18 Antihypertensive medication adherence Self-efficacy Frequencies (n=120)

Survey Questions	n	Response Items %		
*How sure you are that you can take your BP Meds all of the time		Very sure	Somewhat sure	Not at all sure
When busy at home	118	69.5	24.6	5.9
When at work	117	67.5	22.2	10.3
When no one to remind you	120	71.7	23.3	5.0
When you worry about taking them for the rest of life	119	62.2	27.7	10.1
When they cause SE	120	47.5	34.2	18.3
When cost a lot of money	119	54.6	31.1	14.3
When you come home late	118	60.2	33.9	5.9
When you do not have symptoms	120	70.0	22.5	7.5
When you are with family members	120	75.8	17.5	6.7
When in a public place	119	71.4	21.8	6.7
When afraid of becoming dependent	118	52.5	33.1	14.4
When you are afraid they affect sexual performance	117	53.0	31.6	15.4
When time to take is between meals	119	71.4	21.0	7.6
When you feel you do not need them	118	59.3	28.8	11.9
When you are traveling	118	73.7	22.0	4.2
When you take them more than 1x day	118	66.9	23.7	9.3
When they sometime make you tire	118	55.9	30.5	13.6
If they sometime make you dizzy	117	43.6	31.6	24.8
When you have other meds to take	117	66.7	23.1	10.3
When you feel well	119	73.1	23.5	3.4
If they make you want to urinate while away from home	117	59.8	28.2	12.0

*Rate how sure you are you can carry out the following tasks P all the time	n	Very sure	Somewhat sure	Not at all sure
r Get refills before you run out	115	72.2	20.9	7.0
e Make taking your meds part of Your routine	115	78.3	19.1	2.6
d Fill your prescriptions whatever they cost	113	66.4	22.1	11.5
i Always remember to take your BP meds	115	73.9	21.7	4.3
c Take your BP meds for the rest of your life	114	63.2	24.8	11.5
t				
o				

Predictors of HBP Findings

RQ 10. Is there a statistically significant relationship between the independent predictor variables in RQ1 through RQ9 and BP in Black African American Adults?

Data analysis was conducted on the independent variables in *RQ 1* through *RQ 9* to determine whether they were predictors of HBP. Univariate analyses determined that low education, low income, younger age and education interaction, younger age and low income interaction, bonding SC, bridging SC, and linking SC were predictors of measured HBP in this sample (n=208). Predictors of measured HBP included: education (OR=0.1; 95% CI 0.0, 0.8); income (OR=0.1, 95% CI 0.1, 0.9); age-income interaction (OR=5.9, 95% CI 1.3, 26.5); age-education interaction (OR=11.1, 95% CI 2.0, 60.7); and bonding SC (OR=2.3, 95% CI 1.1, 5.0) for subjects < 60 years old. Predictors of measured HBP for subjects ≥ 60 years old included: bonding SC (OR=0.3, 95% CI 1.1,

15.4); bridging SC (OR=0.5, 95% CI 0.3, 0.9); and linking SC (OR=0.3, 95% CI 0.1, 0.9).

When low education, low income, and bonding SC were included in a multiple logistic regression model for subjects < 60 years old, bonding SC was the only predictor of measured HBP; OR = 2.4; 95% CI 1.1 to 5.0. See Table 5.19. Multiple logistic regression analysis also indicated that bonding, bridging, and linking SC were not predictors of HBP in subjects ≥ 60 years old. See Table 5.20. With regard to the hypothesis, the study findings indicate that there was a statistically significant relationship between SC and BP in this sample of Black African American adults. A discussion of the findings of the study is presented in Chapter 6.

Table 5.19 Predictors of HBP (< 60 years old)

Predictor Variables	Odds Ratio	95% CI	
		Lower	Upper
Low education	1.8	0.6	5.3
Low income	0.5	0.2	1.1
Bonding SC *	2.4	1.1	5.0

*Statistically Significant

Table 5.20 Predictors of HBP (> 60 years old)

Predictor Variables	Odds Ratio	95% CI	
		Lower	Upper
Bonding SC	0.3	0.1	1.2
Bridging SC	0.6	0.3	1.2
Linking SC	0.4	0.1	1.8

Chapter 6
Discussion of Study Findings

This chapter draws conclusions from Chapter 5 based on the findings. The aim of this study was to assess BP and the extent to which lifestyle behaviors and BP are modified by the ecosocial context of SC in a sample of Black African American adults. Ten research questions were developed to further that aim. The findings were mixed and favorable overall.

Several contextual factors should be considered when interpreting the findings of this study. First, over 95.0% of the convenience sample lived in the San Francisco Bay area where income, education, access to fresh fruits and vegetables, and an active lifestyle (versus a sedentary lifestyle) may be higher than in similar densely populated areas in the US. Second, most of the data were collected at two faith-based sites where there is high potential for bonding SC, whereby, health behaviors may be highly influenced by strong social ties, group norms, expectations, and role-modeling. Third, the greater percentage of subjects (approximately 75.0%) who completed the survey at one of the faith-based locations did so while seeking and receiving community resources at a food bank/meals program. These factors in addition to the subjects being a convenience sample were limitations of the study.

Overall, HBP frequencies were greater in this sample compared to the national average. The 13 mmHg difference in average mean SBP in this sample compared to the national sample and the 9 mmHg difference in average mean SBP in hypertensive subjects who were taking antihypertensive medication in both studies suggests that the subjects in this study were at greater risks for stroke (32.0%); greater risk for CHD (20.0%); and greater risk for all-cause mortality

(16.0%). Furthermore, the antihypertensive subjects in this study had a 24.0% greater risk of stroke, 15.0% greater risk of CHD, and 12.0% greater risk of mortality compared to the national sample. When it comes to BP awareness, overall knowledge was moderately high. More than 90.0% of subjects knew HBP was a serious condition that can be controlled by interventions other than antihypertensive medications. However, only two-thirds knew that uncontrolled HBP can lead to end-stage kidney disease; a comorbidity that is higher in this population than in other ethnic groups. With regard to BP awareness, there was a notable difference in the proportion of subjects who reported having HBP (33.8%) compared to those who had measured HBP (43.6%); assuming that there was no actual change in the proportions that became hypertensive; there appears to be an awareness gap of 9.8% in the sample.

Nearly all of the subjects believed they could motivate themselves to reduce fat and salt in their diets, and more confidence that they could maintain healthier eating habits for six months compared to exercise habits. Fewer subjects engaged in activities to reduce chronic stress, and preventing exposures to second-hand smoke ranked higher in comparison to personal tobacco use. This would suggest that these lifestyle behaviors pose a threat to the health of these subjects with regard to HBP and CVD. With regard to psychosocial characteristics, the high level of social support among the high percentage of subjects who indicated minimal or no signs of depression and high levels of social support may suggest that social support served as a protective factor against daily stress.

The high percentage of political participation may have been attributed to the close proximity of data collection and the interest that may have been generated in the most recent US Presidential election by the major candidate of the Democratic Party being of a similar ethnic background as the subjects. This in addition to a higher proportion of subjects who were educated at a baccalaureate degree level or higher also may have influenced the moderately high percentages of civic participation among the subjects in this study compared to Putnam (2000). There was a significantly higher level of confidence in the subjects who had been diagnosed with HBP and were currently taking antihypertensive medications with regard to getting information about HBP from community resources and engaging in behaviors that would effectively control their BP. A higher percentage of subjects in this subset also had a BP that was normal compared to the sample.

Similar to Bourdieu, this study examines SC at the individual level of analysis and from the perspective of SC being a community resource. Statistically significant relationships were found between HBP and the following categorical risk factors: biological (age and ethnicity); social environment (income/education and SC); and personal/behavioral (chronic disease management self-confidence). Little is known with regard to why an increase in SC may lead to less than desirable health outcomes such as HBP and mental distress in some populations. Increases in SC being associated with an increase in BP for subjects < 60 years old may have been influenced by group norms, expectations, and role-modeling that promotes adverse health behaviors such as

tobacco use, high alcohol consumption, and sedentary lifestyle; all known to increase BP and more common in younger age groups. Whereas, increase in SC and decrease in BP in subjects ≥ 60 years old may have been attributed to social networks that have stronger social ties and more history and experiences of managing chronic illness.

This study is unique in that it examines the association between SC and a physiological outcome measure, BP; and the responses were gathered by a paper and pencil questionnaire that afforded the subjects more privacy compared to face-to-face or telephone interviews. Furthermore, important information with regard to BP awareness, lifestyle behaviors, eating habits and exercise self-confidence, SC, social support, chronic disease self-confidence, depression, and antihypertensive medication self-efficacy was gathered from a subset of the population that is difficult to recruit for research; more than 80 community dwelling Black African American men.

In conclusion, the paucity of information with regard to features of bonding SC, bridging SC, and linking SC that may lead to better health outcomes warrants further study. Furthermore, there are implications for the need to identify interventions that may be used to increase bridging SC and linking SC among vulnerable populations to facilitate linkages to economic, educational, and resources that improve health. The findings in this research study suggest that further empirical investigation and development of the SC concept in the health sciences and health disparities research are warranted.

Appendix A

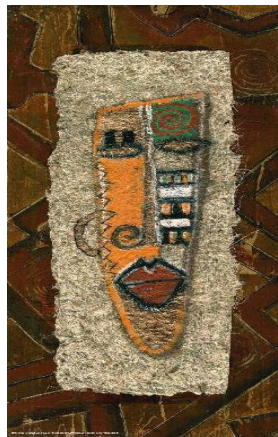
what to do: 150 THINGS YOU CAN DO TO BUILD SOCIAL CAPITAL

Social capital is built through hundreds of little and big actions we take every day. We've gotten you started with a list of nearly 150 ideas, drawn from suggestions made by many people and groups. Try some of these or try your own

1. Organize a social gathering to welcome a new neighbor
2. Attend town meetings
3. Register to vote and vote
4. Support local merchants
5. Volunteer your special skills to an organization
6. Donate blood (with a friend!)
7. Start a front-yard/community garden
8. Mentor someone of a different ethnic or religious group
9. Surprise a new neighbor by making a favorite dinner—and include the recipe
10. Tape record your parents' earliest recollections and share them with your children
11. Plan a vacation with friends or family
12. Avoid gossip
13. Help fix someone's flat tire
14. Organize or participate in a sports league
15. Join a gardening club
16. Attend home parties when invited
17. Become an organ donor or blood marrow donor.
18. Attend your children's athletic contests, plays and recitals
19. Get to know your children's teachers
20. Join the local Elks, Kiwanis, or Knights of Columbus
21. Get involved with Brownies or Cub/Boy/Girl Scouts
22. Start a monthly tea group
23. Speak at or host a monthly brown bag lunch series at your local library
24. Sing in a choir
25. Get to know the clerks and salespeople at your local stores
26. Attend PTA meetings
27. Audition for community theater or volunteer to usher
28. Give your park a weatherproof chess/checkers board
29. Play cards with friends or neighbors
30. Give to your local food bank
31. Walk or bike to support a cause and meet others
32. Employers: encourage volunteer/community groups to hold meetings on your site
33. Volunteer in your child's classroom or chaperone a field trip
34. Join or start a babysitting cooperative
35. Attend school plays
36. Answer surveys when asked
37. Businesses: invite local government officials to
71. Turn off the TV and talk with friends or family
72. Hold a neighborhood barbecue
73. Bake cookies for new neighbors or work colleagues
74. Plant tree seedlings along your street with neighbors and care for them
75. Volunteer at the library
76. Form or join a bowling team
77. Return a lost wallet or appointment book
78. Use public transportation and start talking with those you regularly see
79. Ask neighbors for help and reciprocate
80. Go to a local folk or crafts festival
81. Call an old friend
82. Sign up for a class and meet your classmates
83. Accept or extend an invitation
84. Talk to your kids or parents about their day
85. Say hello to strangers
86. Log off and go to the park
87. Ask a new person to join a group for a dinner or an evening
88. Host a pot luck meal or participate in them
89. Volunteer to drive someone
90. Say hello when you spot an acquaintance in a store
91. Host a movie night
92. Exercise together or take walks with friends or family
93. Assist with or create your town or neighborhood's newsletter
94. Organize a neighborhood pick-up – with lawn games afterwards
95. Collect oral histories from older town residents
96. Join a book club discussion or get the group to discuss local issues
97. Volunteer to deliver Meals-on-Wheels in your neighborhood
98. Start a children's story hour at your local library
99. Be real. Be humble. Acknowledge others' self-worth
100. Tell friends and family about social capital and why it matters
101. Greet people
102. Cut back on television
103. Join in to help carry something heavy
104. Plan a reunion of family, friends, or those with whom you had a special connection
105. Take in the programs at your local library
106. Read the local news faithfully
107. Buy a grill and invite others over for a meal
108. Fix it even if you didn't break it
109. Pick it up even if you didn't drop it
110. Attend a public meeting
111. Go with friends or colleagues to a ball game (and root, root, root for the home team!)
112. Help scrape ice off a neighbor's car, put chains on the tires or shovel it out
113. Hire young people for odd jobs
114. Start a tradition
115. Share your snow blower
116. Help jump-start someone's car
117. Join a project that includes people from all walks of life
118. Sit on your stoop

- speak at your workplace
38. Attend Memorial Day parades and express appreciation for others
 39. Form a local outdoor activity group
 40. Participate in political campaigns
 41. Attend a local budget committee meeting
 42. Form a computer group for local senior citizens
 43. Help coach Little League or other youth sports – even if you don't have a kid playing
 44. Help run the snack bar at the Little League field
 45. Form a tool lending library with neighbors and share ladders, snow blowers, etc.
 46. Start a lunch gathering or a discussion group with co-workers
 47. Offer to rake a neighbor's yard or shovel his/her walk
 48. Start or join a carpool
 49. Employers: give employees time (e.g., 3 days per year to work on civic projects)
 50. Plan a "Walking Tour" of a local historic area
 51. Eat breakfast at a local gathering spot on Saturdays
 52. Have family dinners and read to your children
 53. Run for public office
 54. Stop and make sure the person on the side of the highway is OK
 55. Host a block party or a holiday open house
 56. Start a fix-it group—friends willing to help each other clean, paint, garden, etc.
 57. Offer to serve on a town committee
 58. Join the volunteer fire department
 59. Go to church...or temple...or walk outside with your children—talk to them about why its important
 60. If you grow tomatoes, plant extra for an lonely elder neighbor – better yet, ask him/her to teach you and others how to can the extras
 61. Ask a single diner to share your table for lunch
 62. Stand at a major intersection holding a sign for your favorite candidate
 63. Persuade a local restaurant to have a designated “meet people” table
 64. Host a potluck supper before your Town Meeting
 65. Take dance lessons with a friend
 66. Say "thanks" to public servants – police, firefighters, town clerk...
 67. Fight to keep essential local services in the downtown area—your post office, police station, school, etc.
 68. Join a nonprofit board of directors
 69. Gather a group to clean up a local park or cemetery
 70. When somebody says "government stinks," suggest they help fix it
 119. Be nice when you drive
 120. Make gifts of time
 121. Buy a big hot tub
 122. Volunteer at your local neighborhood school
 123. Offer to help out at your local recycling center
 124. Send a “thank you” letter to the Editor about a person or event that helped build community
 125. Raise funds for a new town clock or new town library
 126. When inspired, write personal notes to friends and neighbors
 127. Attend gallery openings
 128. Organize a town-wide yard sale
 129. Invite friends or colleagues to help with a home renovation or home building project
 130. Join or start a local mall-walking group and have coffee together afterwards
 131. Build a neighborhood playground
 132. Become a story-reader or baby-rocker at a local childcare center or neighborhood pre-school
 133. Contra dance or two-step
 134. Help kids on your street construct a lemonade stand
 135. Open the door for someone who has his or her hands full
 136. Say hi to those in elevators
 137. Invite friends to go snowshoeing, hiking, or cross-country skiing
 138. Offer to watch your neighbor's home or apartment while they are away
 139. Organize a fitness/health group with your friends or co-workers
 140. Hang out at the town dump and chat with your neighbors as you sort your trash at the Recycling Center
 141. Take pottery classes with your children or parent(s)
 142. See if your neighbor needs anything when you run to the store
 143. Ask to see a friend's family photos
 144. Join groups (e.g., arts, sports, religion) likely to lead to making new friends of different race or ethnicity, different social class or bridging across other dimensions

Appendix B



Healthy
Black Families and Communities
 How You Can Make a Difference

If you are **Black/African American**, there's a good chance that you, a relative or an African- American friend has high blood pressure

High Blood Pressure develops earlier in life in Blacks than in Whites, and it is a major underlying cause for **heart attacks, stroke, and kidney failure** in Blacks

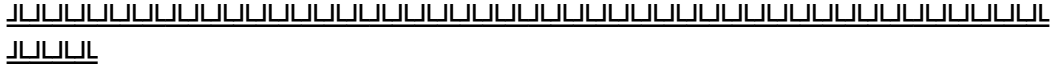
A nurse research investigator at the University of California, San Francisco will conduct a research study beginning in **January 2009**. The sample will include **Black/African-American men and non-pregnant women age 18 years and older**. A major objective of this study is to improve understanding of social factors that influence cardiovascular health within the Black community. **200 participants are needed for the research study**

What is involved? **20 – 25 minutes of your time to:**

- (1) Answer a series of questions related to social support, knowledge of blood pressure, and your perceptions with regards to exercise, diet, taking medication, and lifestyle behavior.
- (2) Each participant's blood pressure and body weight will be measured.

A small stipend (\$10 gift certificate) will be available for participants who complete the study. Cardiovascular health information, published by American Heart Association, also will be available.

To participate and/or acquire additional information about the study, please contact **Herb Pierrie, RN, MSN (415) 346-1951**



Appendix C

AWARENESS of BP SURVEY

The following questions ask about your Blood Pressure.

Please place an "X" beside the answer that you think best describes you and what you know about Blood Pressure.

**** My usual Blood Pressure is:**

_____ (1) Below normal

_____ (2) Normal

_____ (3) Higher than normal

_____ (4) Don't Know

1. I ask my doctor or nurse what my Blood Pressure is when they check it?

_____ (1) Never

_____ (2) Sometimes

_____ (3) Often

_____ (4) Always

2. I discuss my Blood Pressure with my doctor or nurse?

_____ (1) Never

_____ (2) Sometimes

_____ (3) Often

_____ (4) Always

3. High Blood Pressure is a part of normal aging?

_____ (1) Agree

_____ (2) Disagree

_____ (3) Don't Know

BLOOD PRESSURE IS EXPRESSED IN TWO NUMBERS:

- **The top (systolic) number is the pressure as the heart beats.**
- **The bottom (diastolic) number is the pressure between beats.**

4. Blood Pressure is high when only the top number (systolic blood pressure) is at, or over 140 mmHg?

_____ (1) Agree

_____ (2) Disagree

_____ (3) Don't Know

5. Blood Pressure is high when only the bottom number (diastolic blood pressure) is at, or over 90 mm Hg.

_____ (1) Agree

_____ (2) Disagree

_____ (3) Don't Know

6. High Blood Pressure is a serious condition.

- _____ (1) Agree
- _____ (2) Disagree
- _____ (3) Don't Know

7. High Blood Pressure can be controlled.

- _____ (1) Agree
- _____ (2) Disagree
- _____ (3) Don't Know

8. Hypertension is the medical term for High Blood Pressure.

- _____ (1) Agree
- _____ (2) Disagree
- _____ (3) Don't Know

9. Among older persons, the top number (systolic blood pressure) is especially important to predict heart disease, stroke and death.

- _____ (1) Agree
- _____ (2) Disagree
- _____ (3) Don't Know

10. The goal of lowering Blood Pressure is to reduce chances of developing heart disease, kidney failure, or stroke.

- _____ (1) Agree
- _____ (2) Disagree
- _____ (3) Don't Know

11. High Blood Pressure can only be controlled with medication.

_____ (1) Agree

_____ (2) Disagree

_____ (3) Don't Know

12. Physical activity helps keep Blood Pressure in the normal range.

_____ (1) Agree

_____ (2) Disagree

_____ (3) Don't Know

13. Reducing sodium (Salt) intake is helpful to lower Blood Pressure.

_____ (1) Agree

_____ (2) Disagree

_____ (3) Don't Know

14. Three drinks of alcohol per day lowers blood pressure.

_____ (1) Agree

_____ (2) Disagree

_____ (3) Don't Know

15. People with High Blood Pressure have two-to-three-fold greater risk of heart failure than those with normal Blood Pressure.

_____ (1) Agree

_____ (2) Disagree

_____ (3) Don't Know

Please place an "X" beside the answer that you think is correct.

Untreated High Blood Pressure can lead to the following:

16. Alzheimer's Disease:

_____ Yes _____ No _____ Don't Know

17. Heart Disease:

_____ Yes _____ No _____ Don't Know

18. Osteoporosis (a decrease in bone mass):

_____ Yes _____ No _____ Don't Know

19. Kidney failure:

_____ Yes _____ No _____ Don't Know

20. Stroke:

_____ Yes _____ No _____ Don't Know

21. My usual Blood Pressure is _____/_____ mmHg ___ Don't Know

END of this SECTION

Appendix D

Eating & Exercise Self-confidence

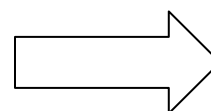
There are **32 questions** in this section. Questions 1 through 20 below lists things people might do while trying to change their eating habits. Whether you are trying to change your eating habits or not, please rate how confident you are that you can *really motivate* yourself to do these things consistently, *for at least six months*.

Please circle *One* number for each item below to indicate that I know I cannot do it, I am pretty sure I cannot do it, maybe I can do it, pretty sure I can do it, or I know I can do it.

How Sure Are You That You Can Do These Things	Know I Cannot	Pretty Sure I Cannot	Maybe I Can	Pretty Sure I Can	Know I Can
1. Stick to your low fat, low salt foods when you feel depressed, board, or tense	1	2	3	4	5
2. Stick to your low fat, low salt foods when there is high fat high salt food readily available at a party	1	2	3	4	5
3. Stick to your low fat, low salt foods when dining with friends or co-workers	1	2	3	4	5
4. Stick to your low fat, low salt foods when the only snack close by is available from a vending machine	1	2	3	4	5
5. Stick to your low fat, low salt foods when you are alone, and there is no one to watch you	1	2	3	4	5
6. Eat smaller portions at dinner	1	2	3	4	5
7. Cook smaller portions so there are no leftovers	1	2	3	4	5
8. Eat lunch as your main meal of the day, rather than dinner	1	2	3	4	5
9. Eat smaller portions of food at a party	1	2	3	4	5
10. Eat salads for lunch	1	2	3	4	5
11. Add less salt than the recipe calls for	1	2	3	4	5
12. Eat unsalted peanuts, chips, crackers, & pretzels	1	2	3	4	5
13. Avoid adding salt at the table					

	1	2	3	4	5
14. Eat unsalted, unbuttered popcorn	1	2	3	4	5
15. Keep the salt shaker off the kitchen table	1	2	3	4	5
How Sure Are You That You Can Do These Things	I Know I Cannot	Pretty Sure I Cannot	Maybe I Can	Pretty Sure I Can	I Know I Can
16. Eat meatless (vegetarian) entrees for dinner	1	2	3	4	5
17. Substitute low or non-fat milk for whole milk at dinner	1	2	3	4	5
18. Cut down on gravies & cream sauces	1	2	3	4	5
19. Eat poultry & fish instead of red meat at dinner	1	2	3	4	5
20. Avoid ordering red meat (beef, pork, ham, lamb) at restaurants	1	2	3	4	5

**- Questions 21 through 32 -
Go to Next page**



Questions 21 through 32 below lists things that people might do while trying to increase or continue regular exercise like running, swimming, brisk walking, bicycle riding, or aerobic classes. Whether you exercise or not, please rate how confident you are that you can *really motivate* yourself to do things like these consistently, *for at least six months*.

Please circle *One* number for each item below to indicate that I know I cannot do it, I am pretty sure I cannot do it, maybe I can do it, pretty sure I can do it, or I know I can do it.

How Sure Are You That You Can Do These Things	Know I Cannot	Pretty Sure I Cannot	Maybe I Can	Pretty Sure I Can	Know I Can
21. Get up early, even on weekends, to exercise	1	2	3	4	5
22. Stick to your exercise program after a long, tiring day t work	1	2	3	4	5
23. Exercise even though you are feeling depressed	1	2	3	4	5
24. Set aside time for a physical activity program (e.g walking, jogging, swimming, biking, or other continuous activities for at least 30 minutes, 3 times per week)	1	2	3	4	5
25. Continue to exercise with others even though they seem too fast or too slow for you	1	2	3	4	5
26. Stick to your exercise program when undergoing a stressful life change (e.g. divorce, death in the family, moving)	1	2	3	4	5
27. Attend a party only after exercising	1	2	3	4	5
28. Stick to your exercise program when your family is demanding more time from you	1	2	3	4	5
29. Stick to your exercise program even when you have household chores to attend to	1	2	3	4	5
30. Stick to your exercise program even when you have excessive demands at work	1	2	3	4	5
31. Stick to your exercise program when social obligations are very time consuming	1	2	3	4	5
32. Read or study less in order to exercise more	1	2	3	4	5

END of this SECTION

Appendix E

Lifestyle Behaviors Questionnaire

The following questions contain statements about your present way of life or personal habits.

Please answer each question as accurately as possible by placing an "X" next to the answer that indicates how often you do each behavior.

(11-questions in the section)

1. Eat 3 meals a day (breakfast, lunch, dinner).

(1) _____ Regularly (2) _____ Often (3) _____ Sometimes (4) _____
Never

2. Eat 3-5 servings of fruits and vegetables a day.

(1) _____ Regularly (2) _____ Often (3) _____ Sometimes (4) _____
Never

3. Read labels to see what is in the foods (such as sugar, sodium, added substances, preservatives) before buying.

(1) _____ Regularly (2) _____ Often (3) _____ Sometimes (4) _____
_____ Never

4. Avoid cooking foods in oil, lard, or butter.

(1) _____ Regularly (2) _____ Often (3) _____ Sometimes (4) _____
Never

5. Walk for 20-30 minutes at least 3 times per week.

(1) _____ Regularly (2) _____ Often (3) _____ Sometimes (4) _____
Never

6. Exercise for 20-30 minutes at home least 3 times per week.

(1) _____ Regularly (2) _____ Often (3) _____ Sometimes (4) _____
Never

7. Engage in yoga, exercise, meditation, or use other means for the purpose of managing stress.

(1) _____ Regularly (2) _____ Often (3) _____ Sometimes (4) _____
_____ Never

Please answer each question as accurately as possible by placing an “X” next to the answer that indicates how often you do each behavior.

8. Smoke or use tobacco products.

(1) _____ Never (2) _____ Sometimes (3) _____ Often (4) _____
Regularly

9. Smoke at least 1 cigarette each day.

(1) _____ Never (2) _____ Sometimes (3) _____ Often (4) _____
Regularly

10. Allow family to smoke in my home.

(1) _____ Never (2) _____ Sometimes (3) _____ Often (4) _____
Regularly

11. Allow family or friends to smoke in my car.

(1) _____ Never (2) _____ Sometimes (3) _____ Often (4) _____
Regularly

END of this SECTION

Appendix F

Social Capital Bench Mark Survey (*short-form*)

In this section of the survey, we would like to ask you some questions about how you view other *People, Groups, and Institutions/Organizations*.

Please circle the number next to the answer that best describes how you feel or what you believe.

(6 multiple-part questions in this section)

1. Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?

1. People can be trusted
2. You can't be too careful
3. Don't know / Not sure

2. Next, we would like to know how much you trust different groups of people. Of the groups listed below, would you say that in general you can trust them a lot, some, only a little, or not at all?

2A. People in your neighborhood:

1. Trust them a lot
2. Trust them some
3. Trust them only a little
4. Trust them not at all
5. Not sure / Don't know

2B. How about the police in your local community:

1. Trust them a lot
2. Trust them some
3. Trust them only a little
4. Trust them not at all
5. Not sure / Don't know

Of the groups listed below, would you say that in general you can trust them a lot, some, only a little, or not at all?

2C. People who work in the stores where you shop:

1. Trust them a lot
2. Trust them some
3. Trust them only a little
4. Trust them not at all
5. Not sure / Don't know

2D. How about White people?

1. Trust them a lot
2. Trust them some
3. Trust them only a little
4. Trust them not at all
5. Not sure / Don't know

2E. How about African Americans or Blacks?

1. Trust them a lot
2. Trust them some
3. Trust them only a little
4. Trust them not at all
5. Not sure / Don't know

Of the groups listed below, would you say that in general you can trust them a lot, some, only a little, or not at all?

2F. How about Hispanics or Latinos?

1. Trust them a lot
2. Trust them some
3. Trust them only a little
4. Trust them not at all
5. Not sure / Don't know

The next questions in this section are about *Public Affairs*.

Please circle the number next to the answer that best describes how you feel or what you believe

3. How interested are you in politics and national affairs? Are you very interested, somewhat interested, only slightly interested or not at all interested?

1. Very interested
2. Somewhat interested
3. Only slightly interested
4. Not at all interested
5. Not sure / Don't know

4A. Are you currently registered to vote?

1. Yes
2. No
3. Not eligible to vote
4. Not sure / Don't know

Please circle the number next to the answer that best describes how you feel or what you believe

4B. As you may know, around half the public does not vote in presidential elections. How about you – did you vote in the presidential election in 2004 when Senator John Kerry ran against George Bush, or did you skip that one?

1. Yes, voted
2. No, did not vote
3. Was not eligible to vote
8. Not sure / Don't know

4C. Did you vote in the last presidential election in 2008 when Senator John McCain ran against Senator Barack Obama?

1. Yes, voted
2. No, did not vote
3. Was not eligible to vote
8. Not sure / Don't know

4D. Did you vote for any of the California (state) propositions or San Francisco (local) initiatives that were included on the election ballot in 2008?

1. Yes, voted
2. No, did not vote
3. Was not eligible to vote
8. Not sure / Don't know

5A. How much of the time do you think you can trust the NATIONAL government to do what is right: just about always, most of the time, only some of the time, or hardly ever?

1. Just about always
2. Most of the time
3. Only some of the time
4. Hardly ever
5. Not sure / Don't know

5B. How about your LOCAL government? How much of the time do you think you can trust the LOCAL government to do what is right?

1. Just about always
2. Most of the time
3. Only some of the time
4. Hardly ever
5. Not sure / Don't know

5C. Thinking *POLITICALLY* and *SOCIALLY*, how would you describe your own general outlook: as being very conservative, moderately conservative, middle-of-the-road, moderately liberal or very liberal?

1. Very liberal
2. Moderately liberal
3. Middle-of-the-road
4. Moderately conservative

5. Very conservative
6. Something else
7. Not sure / Don't know

The next questions are about how many times you've done certain things in the past 12 months, if at all.

Please give your best guess, and don't worry that you might be off a little. Please circle the number next to the answer that is the best fit.

About how many times in the past 12 months have you been involved with the following activities:

6A. Worked on a community project?

1. more than once a week
2. about once a week on average
3. twice a month
4. about once a month on average
5. 5 – 9 times
6. 2 - 4 times
7. once
8. never did this
9. Not sure / Don't know

6B. How many times in the past 12 months have you: Donated blood?

Please indicate the number of times: _____
(Please indicate zero - if not at all)

6C. How many times in the past 12 months have you: Attended any public meeting in which there was discussion of town or school affairs?

1. more than once a week
2. about once a week on average
3. twice a month
4. about once a month on average
5. 5 – 9 times
6. 2 - 4 times
7. once
8. never did this
9. Not sure / Don't know

6D. How many times in the past 12 months have you: Attend a political meeting or rally?

1. more than once a week
2. about once a week on average
3. twice a month
4. about once a month on average
5. 5 – 9 times
6. 2 - 4 times
7. once
8. never did this
9. Not sure / Don't know

6E. How many times in the past 12 months have you: Attend any club or organizational meeting (not including meetings for work)?

1. more than once a week
2. about once a week on average
3. twice a month
4. about once a month on average
5. 5 – 9 times
6. 2 - 4 times
7. once
8. never did this
9. Not sure / Don't know

6F. How many times in the past 12 months have you: Had friends over to your home?

1. more than once a week
2. about once a week on average
3. twice a month
4. about once a month on average
5. 5 – 9 times
6. 2 - 4 times
7. once
8. never did this
9. Not sure / Don't know

6G. How many times in the past 12 months have you: Been in the home of a friend of a different race or had them in your home?

1. more than once a week
2. about once a week on average
3. twice a month
4. about once a month on average
5. 5 – 9 times
6. 2 - 4 times
7. once
8. never did this
9. Not sure / Don't know

6H. How many times in the past 12 months have you: Been in the home of someone of a different neighborhood or had them in your home?

1. more than once a week
2. about once a week on average
3. twice a month
4. about once a month on average
5. 5 – 9 times
6. 2 - 4 times
7. once
8. never did this
9. Not sure / Don't know

6I. How many times in the past 12 months have you: Been in the home of someone you consider to be a community leader or had one in your home?

1. more than once a week
2. about once a week on average
3. twice a month
4. about once a month on average
5. 5 – 9 times
6. 2 - 4 times
7. once
8. never did this
9. Not sure / Don't know

6J. How many times in the past 12 months have you: Volunteered?

1. more than once a week
2. about once a week on average
3. twice a month
4. about once a month on average
5. 5 – 9 times
6. 2 - 4 times
7. once
8. never did this
9. Not sure / Don't know

6K. Are you a MEMBER of a local church, synagogue, or other religious or spiritual community?

1. Yes
2. No
3. Don't know

6L. Not including weddings and funerals, how often do you attend religious services?

1. Every week (or more often)
2. Almost every week
3. Once or twice a month
4. A few times per year
5. Less often than that
8. Don't know

6M. In the past 12 months, have you taken part in any sort of activity with people at your church or place of worship other than attending services? This might include teaching Sunday school, serving on a committee, attending choir rehearsal, retreat, or other events.

1. Yes
2. No
8. Don't know

END of this SECTION

Appendix G

Social Support Scale

The questions in this section pertain to social support.

Please read the following questions and circle the response that most closely describes your current situation.

(7 questions in this section)

1. Is there someone available to you whom you can count on to listen to you when you need to talk?

<u>All of the time</u>	<u>Most of the time</u>	<u>Some of the time</u>	<u>A little of the time</u>	<u>None of the time</u>
1	2	3	4	5

2. Is there someone available to give you good advice about a problem?

<u>All of the time</u>	<u>Most of the time</u>	<u>Some of the time</u>	<u>A little of the time</u>	<u>None of the time</u>
1	2	3	4	5

3. Is there someone available to you who shows you love and affection?

<u>All of the time</u>	<u>Most of the time</u>	<u>Some of the time</u>	<u>A little of the time</u>	<u>None of the time</u>
1	2	3	4	5

4. Is there someone available to help you with daily chores?

<u>All of the time</u>	<u>Most of the time</u>	<u>Some of the time</u>	<u>A little of the time</u>	<u>None of the time</u>
1	2	3	4	5

5. Can you count on anyone to provide you with emotional support (talking over problems or helping you make a difficult decision)?

<u>All of the time</u>	<u>Most of the time</u>	<u>Some of the time</u>	<u>A little of the time</u>	<u>None of the time</u>
1	2	3	4	5

6. Do you have as much contact as you would like with someone you feel close to, someone in whom you can trust and confide?

<u>All of the time</u>	<u>Most of the time</u>	<u>Some of the time</u>	<u>A little of the time</u>	<u>None of the time</u>
1	2	3	4	5

7. Are you currently married or living with a partner?

<u>All of the time</u>	<u>Most of the time</u>	<u>Some of the time</u>	<u>A little of the time</u>	<u>None of the time</u>
1	2	3	4	5

*Recorded: 0 = All of the time; 1 = Most of the time, some of the time, and a little of the time

END of this SECTION

Appendix H

Chronic Disease Self-confidence Scale

In this section, we would like to know how confident you are in doing certain activities.

For each of the following questions, please circle the number (between 1 and 10) that corresponds to your confidence that you can do the tasks regularly.

(13 questions in this section)

1 = (*not at all confident*) --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10 = (*totally confident*)

1. How confident are you that you can get information about a disease or illness that you have from community resources?

1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10

2. How confident are you that you can get family and friends to help you with the things you need (such as household chores like shopping, cooking, or transportation)?

1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10

3. How confident are you that you can get emotional support from friends and family (such as listening or talking over your problems)?

1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10

4. How confident are you that you can get emotional support from resources other than friends or family, if necessary?

1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10

5. How confident are you that you can get help with your daily tasks (such as house cleaning, yard work, meals, or personal hygiene) from resources other than friends or family, if needed?

1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10

Please circle the number (between 1 and 10) that corresponds to your confidence that you can do the tasks regularly.

1 = (totally confident) --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10 = (not at all confident)

6. How confident are you that you can ask your doctor things about your illness that concerns you?

1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10

7. How confident are you that you can discuss openly with your doctor any personal problems that may be related to your illness?

1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10

8. How confident are you that you can work out differences with your doctor when they arise?

1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10

9. Having an illness often means doing different tasks and activities to manage your condition. How confident are you that you can do all the things necessary to manage your condition on a regular basis?

1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10

10. How confident are you that you can judge when the changes in your illness mean you should visit a doctor?

1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10

Please circle the number (between 1 and 10) that corresponds to your confidence that you can do the tasks regularly.

1 = (*totally confident*) --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10 = (*not at all confident*)

11. How confident are you that you can do the different tasks and activities needed to manage your health condition so as to reduce your need to see a doctor?

1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10

12. How confident are you that you can reduce the emotional distress caused by your health condition so that it does not affect your everyday life?

1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10

13. How confident are you that you can do things other than just taking medication to reduce how much your illness affects your everyday life?

1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10

END of this SECTION

Appendix I

Depression Screener

Please read each item carefully, and circle the answer that best describes how you think, feel, and/or behave in each situation that is described below.

*Please Read Instructions
Below Question # 2
-Carefully-*

Over the last 2 weeks, how often have you been bothered by any of the following problems? (PHQ-2)

1. Little interest or pleasure in doing things.

<u>Not at all</u>	<u>Several days</u>	<u>More than half the days</u>	<u>Nearly every day</u>
0	1	2	3

2. Feeling down, depressed, or hopeless.

<u>Not at all</u>	<u>Several days</u>	<u>More than half the days</u>	<u>Nearly every day</u>
0	1	2	3

**** If your answer for both questions # 1 and # 2 above is zero (-0-), then**

you have completed this section. *DO NOT* answer questions 3 through 9

on the following page. *Skip to the next series of questions in the next section questionnaire.*

**** If your response to questions # 1 or # 2 is 1-2-or-3 (and not-0-), then please go to the next two pages and answer questions 3 through 9.**



Over the last 2 weeks, how often have you been bothered by any of the following problems? (PHQ-9)

3. Trouble falling asleep, staying asleep, or sleeping too much.

<u>Not at all</u>	<u>Several days</u>	<u>More than half the days</u>	<u>Nearly every day</u>	
	0	1	2	3

4. Feeling tired or having little energy

<u>Not at all</u>	<u>Several days</u>	<u>More than half the days</u>	<u>Nearly every day</u>	
	0	1	2	3

5. Poor appetite or overeating.

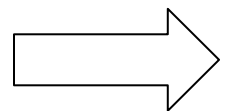
<u>Not at all</u>	<u>Several days</u>	<u>More than half the days</u>	<u>Nearly every day</u>	
	0	1	2	3

6. Feeling bad about yourself, feeling that you are a failure, or feeling that you have let yourself or your family down.

<u>Not at all</u>	<u>Several days</u>	<u>More than half the days</u>	<u>Nearly every day</u>	
	0	1	2	3

7. Trouble concentrating on things such as reading the newspaper or watching television.

<u>Not at all</u>	<u>Several days</u>	<u>More than half the days</u>	<u>Nearly every day</u>	
	0	1	2	3



8. Moving or speaking so slowly that other people could have noticed. Or being so fidgety or restless that you have been moving around a lot more than usual.

Not <u>at all</u>	Several <u>days</u>	More than <u>half the days</u>	Nearly <u>every day</u>	
	0	1	2	3

9. Thinking that you would be better off dead or that you want to hurt yourself in some way.

Not <u>at all</u>	Several <u>days</u>	More than <u>half the days</u>	Nearly <u>every day</u>	
	0	1	2	3

END of this SECTION

Appendix J

Antihypertensive Medication Self-efficacy Scale+

***Complete this section only if you are currently taking
Blood Pressure Medication**

Situations come up that make it difficult for people to take their medications as prescribed by their doctors. Below is a list of such situations. We want to know your opinion about taking your blood pressure medication(s) under each of them.

For each of the situations listed below, please rate how sure you are that you can take your Blood Pressure Medications – ALL OF THE TIME
Please indicate your response by circling the answer that most closely represents your opinion.

(26 questions in this section)

1. When you are busy at home.

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

2. When you are at work.

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

3. When there is no one to remind you.

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

4. When you worry about taking them for the rest of your life.

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

Please rate how sure you are that you can take your Bloor Pressure Medications – ALL OF THE TIME

5. When they cause some side effects.

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

6. When the cost a lot of money

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

7. When you come home late from work

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

8. When you do not have any symptoms

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

9. When you are with family members

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

Please rate how sure you are that you can take your Bloor Pressure Medications – ALL OF THE TIME

10. When you are in a public place

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

11. When you are afraid of becoming dependent on them

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

12. When you are afraid they may affect your sexual performance

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

13. When the time to take them is between your meals

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

14. When you feel you do not need them

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

Please rate how sure you are that you can take your Bloor Pressure Medications – ALL OF THE TIME

15. When you are traveling

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

16. When you take them more than once a day

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

17. If they sometimes make you tired

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

18. If they sometimes make you feel dizzy

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

19. When you have other medications to take

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

Please rate how sure you are that you can take your Blood Pressure Medications – ALL OF THE TIME

20. When you feel well

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

21. If they make you want to urinate while away from home

Very sure

Somewhat sure

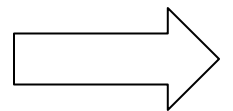
Not at all sure

1

2

3

**See
New Instructions
For
Questions 22 through 26
Next Page**



For questions 23 through 26, please rate how sure you are that you can “carry out” the following tasks ALL OF THE TIME

22. Get refills for your medications before you run out

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

23. Make taking your medications part of your routine

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

24. Fill your prescriptions whatever they cost

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

25. Always remember to take your Blood Pressure medications

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

26. Take your Blood Pressure medications for the rest of your life

<u>Very sure</u>	<u>Somewhat sure</u>	<u>Not at all sure</u>
1	2	3

Appendix K

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO
CONSENT TO PARTICIPATE IN A RESEARCH STUDY
ID: _____

Study Title:

Social Influence on Lifestyle Behaviors and High Blood Pressure in Black African American Adults

This is a research study about high blood pressure in Black African American adults. The study researcher, Herb Pierre, RN from the UCSF Department of Physiological Nursing, will explain this study to you.

Research studies include only people who choose to take part. Please take your time to make your decision about participating, and discuss your decision with your family or friends if you wish. If you have any questions, you may ask the researcher.

You are being asked to take part in this study because you are a Black African American adult who has not experienced a major cardiovascular event (e.g. stroke, major heart attack, or aneurysm), nor are you on dialysis.

Why is this study being done?

The purpose of this study is to gain better understanding of the relationship between social networks, lifestyle behaviors related to cardiovascular disease, and high blood pressure in Black American adults

This study is not being funded by any agencies, institutions, or businesses. The investigators who are conducting the study have no financial or proprietary interests in this research project

How many people will take part in this study?

About 200 Black African American adults who live in California will take part in this study.

What will happen if I take part in this research study?

If you agree, the following procedures will occur:

First, it will be determined whether or not you meet the study criteria, which include the following:

- Identify as being Black, Black American, or Black African American
- Age 18 years or older
- Not pregnant

- Born and/or raised in the United States
- Live in California
- Verbally express an understanding of the purpose of the study
- Verbally express an understanding of your right to withdraw from the study at anytime without any consequences to you
- Verbally express an understanding of privacy and confidentiality as they apply to your participation in the study

If you meet the criteria listed above, this is what will happen next:

- Agreement on a time and place will be determine for you to (1) complete a 150-item questionnaire; (2) have your body weight measured; and (3) have your blood pressure measured if you are not able to do any or all or these three things at this time
- Your blood pressure and body weight will be measured. You will be asked to provide your height (in inches). A tape measure will be available to measure height if you do not know it
- You will be given the option of completing a standard paper and pencil questionnaire or providing verbal responses to questions that will be asked by the research investigator if you prefer.
- The questions will inquire about your knowledge of high blood pressure and the behavioral risks associated with high blood pressure, your social support system and social network, diet and exercise, confidence in your ability to take medication for high blood pressure as recommended if medication has been prescribed, confidence in your ability to management your health, and whether you experience feelings of being down or depressed.
- Enough time will be provided for you to complete the questionnaire. The questionnaire and measurements usually takes 35-45 minutes to complete.
- The research investigator will provide you with a \$10 gift certificate upon completing the questionnaire and measurements if you desire.

Can I stop being in the study?

Yes. You can decide to stop at any time. Just tell the study researcher right away if you wish to stop being in the study.

Also, the study researcher may stop you from taking part in this study at any time if he or she believes it is in your best interest, if you do not follow the study rules, or if the study is stopped.

What side effects or risks can I expect from being in the study?

There is minimal risk associated with participating in this study. Some of the questions asked may make you feel uncomfortable (e.g. questions on depression) or bored. In addition, there possibly may be: (1) Loss of confidentiality (there is a

minimal chance that someone other than the research investigator may gain access to the information that you provide; (2) Loss of privacy (there is a minimal chance that someone other than the research investigator may gain access to your identity and know that you have participated in the study; or (3) discomfort providing bodyweight and blood pressure measurements. However, you are free to refuse to answer any question at any time or refused to provide your bodyweight or blood pressure. If you decide at any time to withdraw and not take part in this study, there will be no penalty to you.

Are there benefits to taking part in the study?

There will be no direct benefit to you from participating in this study. However, the information that you provide may help health professionals better understand/learn more about the factors that influence high blood pressure in Black African Americans.

Will information about me be kept private?

We will do our best to make sure that the personal information gathered for this study is kept private. If information from this study is published or presented at scientific meetings, your name and other personal information will not be used. However, we cannot guarantee total privacy. Your personal information may be given out if required by law. In the event that you indicate that you have (or have had) thoughts or feelings of harming yourself, the law requires that a crisis intervention professional be contacted on your behalf.

What are the costs of taking part in this study?

There will be not cost or charges for participating in this study.

Will I be paid for taking part in this study?

You will not be paid for taking part in this study. However, you will receive a stipend (\$10 gift certificate) in appreciation for your participation in the study if you desire

What are my rights if I take part in this study?

Taking part in this study is your choice. You may choose either to take part or not to take part in the study. If you decide to take part in this study, you may leave the study at any time. No matter what decision you make, there will be no penalty to you in any way.

Who can answer my questions about the study?

You can talk to the researcher(s) about any questions, concerns, or complaints you have about this study. Contact the researcher(s) Mr. Herb Pierrie at (415) 346-1951

If you wish to ask questions about the study or your rights as a research participant to someone other than the researcher or if you wish to voice any problems or concerns you may have about the study, please call the Office of the Committee on Human Research at (415) 476-1814

CONSENT

You have been given a copy of this consent form to keep.

PARTICIPATION IN RESEARCH IS VOLUNTARY. You have the right to decline to be in this study, or to withdraw from it at any point without penalty.

If you wish to participate in this study, you should sign below.

Date

Participant's Signature for Consent

Date P

Appendix L

SmartZone Communications Center

hpierrie@comcast.net

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RE: request for reprint

From : National Health Information Center <NationalHealthInformationCenter@iqsolutions.com> **Wed Jun 15 2011 7:20:04 AM**
Subject : RE: request for reprint
To : 'hpierrie@comcast.net' <hpierrie@comcast.net>

Dear Mr. Pierrie,

Thank you for contacting the National Health Information Center (NHIC). NHIC is an information and referral service sponsored by the Office of Disease Prevention and Health Promotion (ODPHP), U.S. Department of Health and Human Services (HHS).

Healthy People provides science-based, 10-year national objectives for promoting health and preventing disease. Since 1979, Healthy People has set and monitored national health objectives in order to:

- Encourage collaborations across sectors
- Guide individuals toward making informed decisions about their health
- Measure the impact of disease prevention activities

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To stay connected with Healthy People, visit the Web site at: <http://www.healthypeople.gov/2020/connect/default.aspx>. You can also subscribe to get [Healthy People email updates](#).

Please contact us again if you have more questions.

Sincerely,

R. M. Langston
Information Services Manager
National Health Information Center
P.O. Box 1133
Washington, DC 20013-1133
info@nhic.org
(301) 565-4167

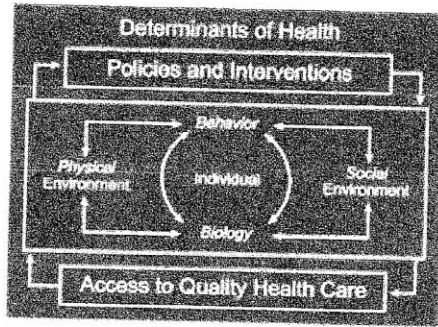
Promote health in your community—Check out our new [2011 National Health Observances online toolkits](#) to get started.

From: hpierrie@comcast.net [mailto:hpierrie@comcast.net]
Sent: Tuesday, June 07, 2011 3:07 PM
To: National Health Information Center
Cc: Herbert Pierrie
Subject: request for reprint

Attention: Reprint Authorization Personnel

I am sending this email to request use of the Determinants of Health Model that first appeared (I believe) in the CDC Healthy People 2010 report.

See figure below



I am requesting to use this model in my doctoral dissertation as a framework for identifying risk factors that are associated with high blood pressure and cardiovascular disease. Please let me know if additional information is needed in order to honor this request.

Thank you & Best regards,

Herb Pierrie, RN, MSN, PhD(c)
University of California - San Francisco
School of Nursing
San Francisco, CA
Herbert.Pierrie@ucsf.edu

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Issue Number	10
Type of Use	Dissertation/Thesis
Requestor type	<i>Individual</i>
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Expected completion date	Jun 2011
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Fwd: Permissions Request

From : Nick Nicholas <thenick58@gmail.com>
Subject : Fwd: Permissions Request
To : hpierrie@comcast.net

Fri Jun 17 2011 11:37:57 AM

One down ... just waiting on the requested info for JAMA now, I believe.

Best regards,

Nick

----- Forwarded message -----

From: **Bernard, Valerie** <valerie.bernard@sagepub.co.uk>
Date: Fri, Jun 17, 2011 at 10:16 AM
Subject: RE: Permissions Request
To: Nick Nicholas <thenick58@gmail.com>

Dear Nick,

Thank you for your request.

Herb Pierrie is welcome to include Figure 2. Dimensions of Social Capital (page 67) from A Dimensional Approach to Measuring Social Capital: Development & Validation of a Social Capital Inventory, in *Current Sociology* (2001), vol 49 (2), 59-102 (Author(s): Narayan and Cassidy) in both printed and electronic versions of his dissertation entitled "Social Influence on Lifestyle Behaviors & High Blood Pressure in Black African American Adults," due to be released in 2011.

It is fine to have a single hard copy of the dissertation will be included in the UCSF library holdings and to include it in the University of Michigan digital institutional repository for dissertations.

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I hope this helps,

Kind regards,

Valérie Bernard

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From: Nick Nicholas [mailto:thenick58@gmail.com]

Sent: 11 June 2011 01:01

To: Bernard, Valerie

Subject: Permissions Request

Greetings:

I am writing on behalf of Herb Pierrie, PhD candidate at University of California-San Francisco.

I am writing to request permission for printed and electronic versions of a dissertation using the following figure from the publication named below, in which I believe you hold the copyright:

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Author(s): Narayan and Cassidy

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University of California-San Francisco (UCSF)
School of Nursing –Department of Physiological Nursing

Mr. Pierrie's dissertation supervisor is:
Erika Froelicher, RN, PhD, FAAN

Mr. Pierrie's contact information is as follows:
2 Koret Way, #N-631
San Francisco, CA 94143-0610
Herbert.Pierrie@ucsf.edu
619 957 8870 (cell)

Thank you for your prompt attention to this request.

Yours sincerely,

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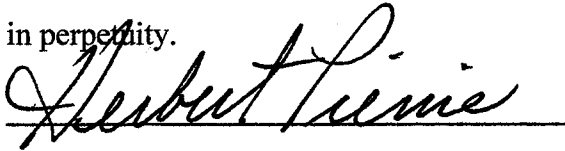
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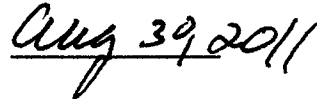
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