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CRITICAL FACTORS THAT INFLUENCE ADHERENCE TO THERAPEUTIC MEDICAL REGIMEN AMONG HYPERTENSIVE INDIVIDUALS FROM THE UNITED STATES VIRGIN ISLANDS

DISSERTATION

Presented in Partial Fulfillment of the

Requirements for the Degree of

Doctor of Philosophy in Nursing

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Jamelah A. Morton

2016

CRITICAL FACTORS THAT INFLUENCE ADHERENCE TO THERAPEUTIC MEDICAL REGIMEN AMONG HYPERTENSIVE INDIVIDUALS FROM THE UNITED STATES VIRGIN ISLANDS

DISSERTATION

By

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2016

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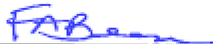

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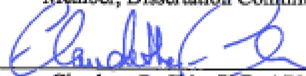

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Abstract

Background: Hypertension is an astounding global public health challenge affecting approximately 60 million Americans and more than 1 billion individuals worldwide. Hypertension has fervent implications in cardiovascular disease and premature death. It is one of the most common and most important modifiable risk factors for coronary artery disease, stroke, congestive heart failure, chronic kidney disease, and peripheral vascular disease. Non-adherence to a therapeutic regimen is an international crisis, preventing efficacious management of chronic diseases like hypertension. The rate of hypertension among the US Virgin Island population is disquieting when equated to that of persons living on the US mainland. US Virgin Islanders are American citizens living in the Caribbean. The social structure and cultural influences of this population thus are unique and may influence their everyday life patterns in ways that significantly impact adherence to therapeutic regimens. Safe and effective therapeutic interventions are the driving forces behind effective patient care and overall optimal patient outcomes. Influences affecting adherence practices on hypertension have not been studied in this population and must be isolated to effectively curtail the deleterious effects of this disease process.

Purpose: The purpose of this qualitative grounded theory study was to 1) explore the critical factors that influence therapeutic adherence among hypertensive patients residing in the US Virgin Islands; 2) identify the attitudes of US Virgin Islanders that may influence therapeutic adherence; and 3) determine the health beliefs of US Virgin Islanders that may influence therapeutic adherence.

Philosophical Underpinnings: Grounded Theory is based in the Naturalist Constructivist paradigm and is informed by the philosophical constraints of symbolic interactionism and pragmatism.

Method: The research approach was qualitative. Grounded Theory was used to uncover a substantive theory that could articulate the critical factors influencing adherence to therapeutic medical management among the hypertensive population residing in the United States Virgin Islands.

Design: Strauss and Corbin's Grounded Theory method guided the data collection and analysis of this study. Purposive, snowball and theoretical sampling were utilized respectively in this study. Data was collected through semi-structured interviews. Interviews were conducted with twenty-one individual participants and then with a focus group of four participants. The process of data collection and analysis was simultaneous; data was scrutinized as themes and categories were extrapolated using open, axial and theoretical coding techniques. This process yielded five main categories and sixteen subcategories, which were further conceptualized into a substantive theory that offered a conceptual description of the phenomenon.

Results: The main categories that emerged to describe the behavior of adherence to therapeutic medical management in the hypertensive population form the United States Virgin Islands were (1) ***mistrusting, (2) reacting, (3) educating, (4) socializing*** and *(5)* ***financing***. These categories were supported by the subcategories (1a) *perceived lack of provider, (1b) perceived lack of provider cultural sensitivity, (1c) perceived lack of adequate provider credentialing, (1d) perceived inflation of healthcare cost, (2a) fear of complications (2b) symptom-based management, (3a) denying, (3b) relying, (3c) owing, (3d) defying, (4a) dietary influences, (4b) use of herbal remedies, (4c) strong sense of spiritually, (5a) healthy eating purchasing*

medications and (*5b) long-term sustainability*. The interfacing and critical analysis of these categories and subcategories led to the development of the social process of *deciding*. *Deciding* is conceptualized as the most active and finite process that offers an in-depth description of the dynamic process of adherence to a hypertensive regimen among hypertensive individuals from this population.

Conclusions: The theoretical framework constructed in this study is useful to inform nursing education, practice research and policy. Ethno-cultural effective care is an essential component of efficacious disease management. This study provides insights that could prove useful in informing care initiatives for the population from the United States Virgin Islands and other like populations.

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extend yourself; your actions exemplify those of a true scholar, affording this young and inexperienced student an opportunity to grow and contribute to the profession you love. Your help afforded the success of this project and I am eternally grateful.

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DEDICATION

I dedicate this work to the life and legacy of Ms. Sylvia Morton-Cannonier. Your passing was sudden, it left a hole in the hearts of all who loved and adored you. In your life, you pushed me to be great and in your death, you inspired me to pursue this research topic. I owe who I am today to you and although you are not with me physically to celebrate this great milestone, I know that your spirit lives on in me and your smile and infectious laughter will forever be tattooed on my heart. I love you Aunty Mary, may your soul forever rest in peace.

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CHAPTER ONE

Hypertension, or high blood pressure (HBP) is one of the most prevalent chronic illnesses worldwide. Expert members from the Eighth Joint National Committee on prevention, detection, evaluation and treatment of blood pressure guidelines (JNC 8) identifies hypertension as the most common disorder in primary care that leads to illnesses such as myocardial infarction, stroke, renal failure and ultimately death if it is not detected, treated and controlled in its early stages (James et al., 2013). This disease disproportionately affects persons of African descent and is particularly prevalent in regions populated primarily with such individuals. There are many modifiable factors that contribute to the etiology, prevalence and deleterious effects of HBP. There are also many treatment measures that can be put into place to deter these effects. Nonetheless, many populations worldwide continue to suffer the colossal health and financial-related burdens that are directly and indirectly related to poor control of HBP.

The World Health Organization (WHO) and the Center for Disease Control (CDC) both highlight adherence to treatment regimens as a required standard of care that can directly decrease the vast rate of morbidity and mortality resulting from the lack of control of chronic diseases such as hypertension. Statistics from the WHO identify that the rate of therapeutic adherence for chronic diseases in industrialized countries is approximately fifty percent. However, this figure is significantly lower for developing countries (WHO, 2003). Adherence to treatment of chronic illnesses necessitates intricate active involvement from the patient. It also demands that patients thoroughly comprehend that treatment interventions are long-term and involve not only the taking of a pill, but also requires substantial life-style management interventions such as, following specific dietary practices, engaging in regularly scheduled exercise regimens, decreasing stress and attending regular visits to designated healthcare

providers. WHO (2003) details that although the above-mentioned factors are patient-associated, the healthcare and service delivery systems have a tremendous responsibility and authority in ascertaining that the follow through of these measures occurs among various populations. The factors surrounding adherence behaviors as it relates to hypertension are immense and must be a focal point of discussion and research among healthcare providers and stakeholders (WHO, 2013). Furthermore, detailed plans for intervention must be put in place to curtail the prevalence of hypertension and improve patient care overall (WHO, 2003).

Statistics show the population from the United States Virgin Islands as one of many nations that sustain increased rates of morbidity and mortality because of poorly- controlled hypertension. The current literature surrounding this phenomenon as it relates to this population identifies the general problem, but does not rationalize the confounding factors that contribute to its occurrence. There is a significant paucity in current literature that speaks to the impact of adherence to hypertensive therapy management among persons from the United States Virgin Islands. The goal of this qualitative grounded theory study is to explore the critical factors that influence adherence to hypertensive therapeutic treatment measures in the hypertensive patient from the United States Virgin Islands.

Problem and Domain of Inquiry

Background of Study

Blood pressure (BP) is the measure of the force of the blood flow against the arterial vessels in the body. The higher the BP, the harder the heart must work to push blood to the body and facilitate optimal cellular and tissue function. BP has two components that make up the reading. The top number is identified as the systolic number, which is the maximum pressure exerted on the vessels and the bottom is identified as the diastolic number which represents the

minimal pressure exerted on the vessels. The Center for Disease Control (CDC), along with the WHO, the Eight Joint National Committee Guidelines (JNC 8), the American Heart Association, the American Society of Hypertension and the International Society of Hypertension in blacks all define hypertension as systolic BP of 140 mmHg or higher or a diastolic BP of 90 mmHg or higher. This researcher will reference these experts throughout this study and utilize these parameters as a standard definition to describe the presence of hypertension in the participants of this study. Uncontrolled hypertension will be described as any measure of blood pressure consistently greater than 140 mmHg systolic and 90 mmHg diastolic with necessary treatment measures in place.

Global Impact of Hypertension

The global impact of hypertension is gargantuan, because it is one of the major contributors to cardiovascular diseases. Cardiovascular diseases are currently the number one cause of death worldwide (WHO, 2013). WHO (2013) currently identifies high blood pressure as one of the primary modifiable contributors to heart disease, stroke, kidney disease and overall premature mortality related to these diseases. Current literature shows that appropriate treatment of mild to moderate hypertension can significantly reduce the end organ damage that may manifest as a result. Most people who suffer from this disease do not display any symptoms of illness, making it very hard for healthcare providers to convince individuals that treatment is necessary and even harder to assure patients with hypertension that lifelong treatment is mandated. The literature supports adequate control of blood pressure as a necessary means to deter all the serious effects of this ailment.

There are many behavioral, environmental/social, metabolic and structural individual factors that contribute to the development of hypertension. These components may be viewed as

risk factors that need to be addressed to curtail the impact of this disease. The behavioral risk factors identified in the literature include influences such as consumption of foods high in salt and fat and low in vegetables and fruits, consumption of alcohol, sedentary lifestyle, and poor stress management (WHO, 2013). The environmental/social determinants of hypertension outlined in the literature include globalization, urbanization, increasing aging population, low socioeconomic status, lack of education and poor housing (WHO, 2013). Some of the metabolic risk factors identified are obesity and hyperlipidemia (WHO, 2013). Although hypertension is one of the primary causative factors in heart disease, structural conditions in the heart are also strong risk factors for the development of this disease. Other health conditions that can contribute to its prevalence are conditions such as strokes, and kidney disease (WHO, 2013).

Per statistics obtained from the WHO (2013), cardiovascular diseases account for approximately 17 million deaths per year, 45% of which are due to complications of hypertension. Lawes, Hoorn and Rogers (2008) examined the global impact of hypertension and reported that an alarming 7.6 million premature deaths and 92 million disability adjusted life years were attributable to the effects of hypertension. The data from this study also revealed a disquieting 54% of stroke-related and 47% of ischemic heart disease-related deaths worldwide was attributed to the effects of hypertension. Findings from a clinical trial on the effects of hypertension on mortality conducted by Rogers, Lawes, and Mac Mahon (2000) demonstrated that a diastolic blood pressure greater than 80 mmHg accounted for 50% of stroke-related deaths and 24% of coronary heart disease-related deaths in the Eastern Asian population studied.

Hypertension places an enormous financial burden on the institution of healthcare globally. Approximately 40% of all adults over the age of 25 have the diagnosis of hypertension. Six hundred million persons were affected in 1980. This spiraled to over one billion in 2008

(World Health Organization, 2013). The cost to care for a person with hypertension is significant and presents as even more enormous healthcare burden when the disease is left untreated. Hospitalizations that occur because of the complications of the disease can consume a significant portion of household income (WHO, 2013). The projected loss of output in low- and middle-income countries associated with non-communicable diseases is projected at 7.28 trillion dollars between 2011 and 2025, with cardiovascular diseases including hypertension averaging about 51% of this figure (WHO, 2013).

Impact of Hypertension in the United States

Although the US Virgin Islands is a US territory, hypertension in the USVI will be addressed separately. According to the CDC, hypertension costs the United States of America 46 billion dollars each year (CDC, 2011). 77.9 million American adults have the diagnosis of high blood pressure; this averages to approximately 1 out of every 3 adults (American Heart Association, 2013). In 2011, the CDC reported that 36 million Americans did not have their blood pressure adequately controlled. Thirty percent of Americans without the diagnosis of hypertension have the diagnosis of prehypertension, and many go undiagnosed, because the disease may not exhibit any classic signs or symptoms until complications of end organ damage are manifested (CDC, 2011). Hypertension was a primary or contributing factor in the deaths of 348,102 Americans in 2009, accounting for 1,000 deaths per day (WHO, 2013).

Per statistics from the CDC, 32% of US adults older than age 20 has a diagnosis of hypertension and are taking some form of medication to alter this disease (2013). The non-ambulatory medical care survey in 2010 indicated that 38.9 million individuals seek treatment for essential hypertension with their primary care physician (CDC, 2010). The hospital outpatient survey reports that in 2011, 3.7 million individuals seek care for essential hypertension at a

hospital outpatient department (CDC, 2011). The death toll survey from the CDC (2013) revealed that 30,770 per 100,000 were a result of essential hypertension and another 37,144 were due to hypertensive heart disease. The impact of hypertension in the United States is astounding and must be curtailed to decrease its detrimental effects on the overall health of individuals. Controlling hypertension requires lifestyle changes as well as taking daily medications. Reducing the daily average sodium intake by 1 gram is projected at costing the healthcare system an average of cost 18 million dollars, but is projected at reducing the cases of hypertension by 11 million annually (CDC, 2011).

Statistics from the national vital statistics on mortality system published by the CDC the total death toll as a result of hypertension increased 61.8% in 2013. The total death toll related to this disease in 2000 was 245,220, but in 2013 that number jumped to 396,675 (Kung and Xu, 2015), Heart disease continues to be the number one killer among Americans. Healthy People 2020, a document produced by the Office of Health Promotion and disease prevention, hypertension is one of the primary modifiable risk factors. Decreasing the prevalence of hypertension is imperative to reduce its occurrence. The Healthy People 2020 has an initiative to decrease the number of Americans with the diagnosis of hypertension by 10% (U.S Department of Health and Human Resources, 2014). This initiative by Stakeholders to decrease the occurrence of hypertension is a direct implication of the vast negative impact of this chronic illness on the overall rate of morbidity and mortality among US citizens.

Impact of Hypertension in Blacks

The prevalence of hypertension globally among blacks demonstrates tremendous disparities, with the current statistics showing the vast majority of individuals affected by this ailment as persons of African descent. A statement from The International Society of

Hypertension in Blacks (ISHIB) highlights the unfavorable outcomes of hypertension among black persons globally as a multifaceted phenomenon that may be directly or indirectly associated with several interrelated factors. These would include the high prevalence of the disease, the unequal and severe occurrence of the disease among Blacks, inappropriate control of the disease and the presence of comorbid factors such as the presence of other vascular diseases such as diabetes and chronic kidney disease (Flack, Domenic, George, Brown, Keith, Richard, Dallas, Wendell, David, Lea, Nasser, Nesbitt, Saunders, Sciesney-Matlock, and Jamerson 2010). A survey study by Hajjar and Kotchen (2003) concluded that the highest prevalence of hypertension in the United States occurred among Non-Hispanic blacks, which reported around 33.5% for persons under the age of 60 but increased to 65.4% in persons 60 years of age and older. In 2009, the American Heart Association (AHA) showed similar statistics with the rate of hypertension of Non-Hispanic Blacks at an alarming 42.6 % for men and 47.0% for women (AHA, 2013). The calculated death toll for hypertension in 2009 was documented at 18.5 per 100,000, of this, 17.0 were white males, 51.6 were black males, 14.4 were white females and 38.3 were Black females (AHA, 2013).

The statistics detailed above indicate that there is a tremendous disparity with the prevalence of hypertension among Black American citizens. The alarming statistics documented in the literature indicate that this population is quite vulnerable to this illness and therefore requires intervention from stakeholders that would ultimately limit its detrimental effects. As mentioned by the ISHIB, the phenomenon of this illness and its disadvantageous effects on this population is multifaceted and therefore requires a manifold approach for resolution to ensue. Updates from the ISHIB Consensus Statement recommend reducing the target blood pressure

goal in blacks as well as multidrug treatment regimens as treatment goals required to reduce this disease burden on this population.

Hypertension and the Caribbean

Statistics from the Healthy Caribbean Coalition (2008), non-communicable diseases such as heart disease, diabetes, lung disease and cancer are the leading causes of death in The Caribbean Community (CARICOM). This Caribbean health entity's fact sheet sites hypertension, along with obesity, tobacco use and high cholesterol as the leading risk factors contributing to death in the Caribbean Islands; 24- 37.5% of Caribbean adults between the ages of 25-64 have been diagnosed with hypertension (Healthy Caribbean Coalition, 2008). Hypertension is independently responsible for a high rate of premature mortality among the Afro-Caribbean population. The age-adjusted deaths related to this disease in 2000 was estimated to be more than 30 per 100,000 in most of the CARICOM countries, as compared to 10 per 100,000 in the United States and Canada (Healthy Caribbean Coalition, 2008). Bidulesc, Francis, Ferguson, Bennett, Hennis, Wilks, Harris, Macleish, and Sullivan (2015) in their literature analysis concluded that overall hypertension prevalence is much higher in Afro-Caribbean Blacks than it is in caucasians, South-Asians and even African blacks in some instances.

Hypertension and the United States Virgin Islands

Figure1: Map of United States Virgin Islands, ICCCN 2008.

The United States Virgin Islands (USVI) is an unincorporated territory of the United States located in the Caribbean. This tropical paradise is comprised of four inhabited larger Islands: St. Croix, St. Thomas, St. John and Water Island. There are approximately 50 uninhabited islands and cays (US Virgin Islands Department of Health, 2003). The cultural make-up of the population is immensely diverse, with the largest part of the populace coming from its neighboring Caribbean Islands. The breakdown of this population from the 2000 census,

reveals a total of 76.2% Blacks, 13.1% whites (caucasians), 14.0% Hispanics or Latino, 1.1% Asian and 6.1% listed as other living on the islands.

A United States Virgin Islander has a rich heritage ingrained in the fact that the make-up of the people is very diverse in their cultural influences. The largest group of Virgin Islanders is Black. According to the census reports, this figure is likely reflective of the historical origins of the Islands, with a great portion of this population stemming from African slave ancestry. The first pre-Columbian inhabitants of the United States Virgin Islands were documented to have been the Arawaks, Ciboneys and the Carib Indians (Dookhan, 1994). European settlers came to the Virgin Islands after 1492, when Christopher Columbus made this mark on the territories. In the early 1700s the Danish acquired possession of the islands of St. Thomas, St. John and St. Croix, respectively (Dookhan, 1994). The Danish slave trade began in the 1700s in response to the need for drudges in the Islands of the West Indies; this influx marked the entry and settlement of African slaves in the US Virgin Islands (Dookhan, 1994). The Islands were owned by Denmark until the early 1900s and was purchased by the United States in 1917.

Cultural Practices. Culture is defined as a set of norms embraced in common by a group. These norms typically define behavior (Wasti, Randall, Simkhada and Van Teijlingen, 2011). Cultural influences dictate the way care is perceived and received and thus may have tremendous influences on medication adherence. Purnell and Paulanka (2003) in their writing on transcultural diversity and healthcare, articulate the importance of understanding culture in conducting scientific inquiry as well as care delivery. Higginbottom, Mogale, Mollel, Ortiz, Richter and Young (2011) in their integrative review noted that patients and health care professionals alike have elucidatory facsimiles of health care and illnesses. These preconceived belief systems have various kinds of impact on how treatment modalities are accepted and

executed and can greatly influence patient care overall. Population-sensitive assessments of health must be explored and communicated so that healthcare initiatives could be improved. Many researchers have examined various factors that may deter adherence some explore these factors globally, some by ethnicity others by social structure. Higginbottom, et al. (2011) investigated the implications of culture as an innate aspect of adherence and concluded that an increased focus on competence and success of various health services, patient safety, and risk management, necessitates stipulations for culturally-responsive and competent health services to become paramount.

When investigating the impact of any phenomenon on any ethnic group, the researcher must take into consideration cultural factors that may influence the population. Cultural determinants may not be the only causative factor responsible for any specific behavior; however, the ramifications of this construct are immense and can strongly influence various levels or maybe all dimensions of a population's behavioral patterns. The concept of adherence has very strong social implications; therefore, a priority must be to look at the cultural factors as a strong influence of adherence.

The cultural practices of the United States Virgin Islands are infused by the vast heritage that makes up its history. Local towns still contain buildings bearing the Danish structural designs. The carnival celebration that takes place in the islands is a perfect representation of these cultural influences that have been depicted among the islanders. This carnival is reflective of an infusion of celebration customs from the Spanish, French, English, Danish and African settlers and of the indigenous Indian inhabitants of the Islands. This is a time of the year when the locals get dressed up in bright colorful costumes and dance in the streets. During this time,

there is also a cultural explosion of foods and locally-infused music that ignites the celebration an example of this is depicted in the photo below.

Figure 2: (Kwekudee, 2014)

Another US Virgin Island cultural tradition that depicts the heritage of these Islands is represented in the folk dancing that is known across virgin Island culture. The two folk dances are the quadrille, with a strong European influence and the Bamboula drum dance which has a strong African influence.

Figure 3: USVI/BVI Friendship Day, 2012

The picture above is that of native men and women wearing regalia representing a rich tapestry of Caribbean colors and dancing the quadrille

A large amount of the US Virgin Island's population includes individuals who have also migrated from other afro-Caribbean Islands. AS such, the foods and customs have merged to reflect the cultural kaleidoscope that is seen on the island. Statistics from the United States Virgin Islands Department of Health (2003) show that a vast portion of these are from the neighboring Caribbean Islands, with 3% from Anguilla, 13.3% from Antigua and Barbuda, 7.4% from the British Virgin Islands, 19.5% from St. Kitts and Nevis, 13.6% from Dominica, 8.8%

from the Dominican Republic, 9.5% from St. Lucia, 5.9% from Trinidad and Tobago, 1.4% Haiti, 1% from Jamaica and another 8.9% from other West Indian Islands. There is also a significant Hispanic influence on the cultural practices of the native Virgin Islander, with 14.0% of the population described as Hispanic or Latino (USVI Department of Health, 2003). This strong Caribbean impact has a direct influence on foods, health and the overall welfare of persons living on the Islands. The cultural practices of most of the Caribbean Islands stem from the interactions of the European settlers, indigenous natives and the African slaves who were imported because of the slave trade. Since the Virgin Islands have been owned by the United States for such a long time, some of the daily practices and local customs are also influenced by various US customs and practices. The infusion of various cultural and ethnic groups that make up the population of these Islands contributes to the vast diversity that representative of the Virgin Islands culture. This explosion of cultural influences has left the US Virgin Islands with a diverse and eclectic blend of practices that render this population inimitable.

Impact of Hypertension on the US Virgin Islander

The Health Disparities Profile 2011, a document produced by the US Department of Health and Human Services, Office of Woman's Health (2011), shows the US Virgin Islands as one of the United States jurisdictions with a high rate of coronary artery disease. The document, 'Healthy Virgin Islands 2010,' is a health care initiative derived manuscript compiled by the United States Virgin Islands government. This document, modelled after the US mainland Healthy people 2010 government publication, delineates the multiple health challenges faced by this population. Healthy Virgin Islands 2010 reports cardiovascular diseases as the leading cause of death among this population. The most current statistics on the cardiovascular death toll was from 1998, which shows that cardiovascular-related deaths accounted for 34% of deaths in this

population; 56% of these were males, 73% of which were black males, and 94% were aged 45 and older (US Virgin Island department of Health, 2003). Per these statistics, hypertension accounted for 4% of all deaths; 75% of these were males, 81% were black, 96% were non-Hispanic persons, and 96% of these were 45 years and older (US Virgin Islands Department of Health, 2003).

The total number of US virgin Islanders diagnosed with hypertension totals a significant 26% (US Virgin Islands Department of Health, 2003). The Behavioral Risk Factor Surveillance Survey conducted by the CDC indicated that the prevalence of hypertension was higher among persons from the US Virgin Islands than in 42 of the 51 states that participated in the survey (US Virgin Islands Department of Health, 2003). The trend in persons affected by this ailment shows higher prevalence among lower- income persons, with documentation showing 28.7% of US Virgin Island families below the poverty level. Individuals with less education were also at higher risk for hypertension, with the highest percent of persons (26.0%) in the territory attaining only a high school diploma or its equivalent (US Virgin Islands Department of Health, 2003). Adults older than 65 years of age ranked highest for having hypertension and there was also a higher instance of this disease noted among Hispanics in this population (US Virgin Islands Department of Health, 2003).

The statistics presented by the United States Virgin Islands Department of Health and other healthcare regulatory agencies indicate that there is a tremendous incongruence in the rates of hypertension among this population, and unquestionably designates this population as one that is at tremendous risk. This Healthy People Virgin Islands 2010 document delineates unhealthy nutrition practices and a sedentary lifestyle as a root cause for the prevalence of chronic diseases among this population (US Virgin Islands Department of Health, 2003). Other pertinent health-

care issues presented in the Healthy People 2010 document identify decreased access to care as a prohibiting factor. One of the initiatives of Healthy Virgin Islands 2010 is to improve preventative care among this population. But some patient barriers identified by this initiative include, knowledge deficit, suspicion by the USVI citizens regarding effectiveness of prevention, lack of usual source of primary care and lack of financial capability to afford preventative care (US Virgin Islands Department of Health). Some of the barriers to adherence observed in this population were identified Callwood, Campbell, Gary and Radelet (2012) in their qualitative study; this study reflected both cultural and economic care barriers. Their study also identified fear of threats to privacy and confidentiality as barriers that prevent persons from this population from taking full advantage of available health services (Callwood, Campbell, Gary and Radelet, 2012). Another document that highlights the obstacles in obtaining healthcare for this population is the Health Disparities Profile 2011. This editorial presents the issue that the US Virgin Islands has the lowest rate of health insurance coverage of all United States jurisdictions (DHHS office of Women's Health, 2011). This data highlights significant barriers to health promotion and disease prevention for this population and could be one of many causative factors leading to the prevalence of hypertension among this population.

There is currently very limited data that highlights the determinants of the health practices of person from the United States Virgin Islands. The Healthy Virgin Islander 2020 document, the Callwood, Campbell, Gary, and Radelet 2012 study and DHHS office of Women's Health do indicate some barriers; however, despite these identified barriers to adequate preventative care among this population, there is presently no literature that isolates individual adherence practices pertaining to hypertension management. The existing health reports continue to show significant negative health factors that impact this population. Some of these factors

have been explored in other populations as barriers to adherence. Exploring the implications of adherence is a necessary component of management of any chronic disease. This construct must be explored in this population as an initial step in reducing the morbidity and mortality resulting from the prevalence of this disease.

Evolution of Adherence

This study sought to understand the factors that influence hypertension among US Virgin Islanders. As such, it is important to address certain significant terms, which will need to be taken into consideration during data collection and analysis. Adherence is one such concept. The term “adherence” is a complex, multifaceted concept that is dynamic in its applications. Society has transitioned from using the concept of compliance to adherence. Other terms such as “concordance”, “agreement”, “cooperation” and “partnership” have been used when discussing adherence. This concept as defined by healthcare practitioners not only captures the essence of the root definition of the word, but also adds to this a component of self-efficacy and social power that demonstrates a sense of trust between the healthcare provider and the recipient of the healthcare treatment. The World Health Organization (2003) during the summit on adherence, defined this phenomenon as the degree to which a person’s attitude and behaviors toward a care regimen parallels with established recommendations from a health care provider. Cohen (2009) in her study concluded that adherence is contingent on a harmonious patient/provider relationship. Hayes, Ackloo, Sahota, Mc Donald and Yao (2008) have done some of the most noted work on adherence. However, their definition did not delineate patient involvement or relationship but relays adherence practice as the patients’ ability to follow given instructions in taking a prescribed regimen.

The adherence concept has been utilized in the discipline of nursing, psychology and medicine and viewed as synonymous with concepts such as compliance and concordance (The National Coordinating Centre for Service Delivery and Organization, [NCCSDO], 2005). Many authors find the interchanging of the term erroneous reporting that although these terms describe medication taking or health care modifying behaviors the main constructs that governs each of them differ considerably. The National Organization Coordinating Centre for Service Delivery and Organization (2005) defines compliance as the correlation between the extent of follow-through to prescribe regimen by the patient. This concept does not afford for patient interaction in the process, but instead calls for a more paternalistic approach on the part of the healthcare practitioner. Generally, the healthcare practitioner dictates the care and the patient is to follow. Concordance is the most recent of these terminologies and it is currently more prevalently used in the United Kingdom. Normally, it indicates an agreement between patient and practitioner in which the views of both parties are taken into consideration during the decision-making process forming more of a partnership between the two to include the component of patient support in medication taking (NCCSDO, 2005).

Recognizing the detrimental effects of non-adherence and the conflicts that resulted from the then-existing definitions, the WHO introduced a functional definition of the term in 2003. After careful consideration, this definition was delineated as follows: “the extent to which a person’s behavior- taking medication, following a diet, and executing lifestyle changes, corresponds with agreed recommendations from a healthcare provider” (WHO, 2003, p. 3). This definition as instructed by WHO. not only deemed adherence as a proactive rather than reactive patient encounter, it also specified that this concept encompassed all health-related types of behaviors (WHO, 2003). These behaviors as described by WHO (2003) included taking

medications, filling prescriptions, attending follow-up appointments, following diet and exercise regimens, smoking cessation and other health-promoting efforts, such as immunization acquisition. Karakurt and Kasikci (2012) in their study delineated adherence to be a variety of actions and attitudes as pertaining to medication dosing or sticking to dietary regimens. NCCSDO (2005) defines adherence as the degree to which a patient's actions regarding healthcare matches the recommendations established between patient and healthcare provider.

The literature discerns that adherence has components of social and psychological factors that contribute to it its complexity. Empowerment and self-efficacy are both reoccurring terminologies continuously referred to in the literature. The working definition of adherence as identified by the WHO (2003) was established to remove the burden of culpability and facilitate a more cooperative and integrative patient/practitioner relationship giving way to the understanding that human behavior is not reflective of one single process but is a multifaceted occurrence instead.

Adherence to long-term therapies for chronic diseases averages at about 50%. Statistics show that more than than 50% of individuals with hypertension have some factor obscuring optimal control (WHO, 2003 and CDC, 2011). Studies evaluating adherence show personal, societal, and economical factors contribute to this healthcare behavior. The consequences of adherence can have positive effects on patient outcomes, such as decreased mortality and morbidity. Berad et al., (2009) in their study showed an associated 22% decrease in the risk of cardiovascular events of patients with high adherence to anti-hypertensive therapy. Moreover the Calhoun et al., (2012) study also showed a correlation between better BP control and drug adherence. An improved client/ practitioner relation is also another consequence of adherence.

Adherence fosters client/practitioner discourse, which not only permits patients to understand that he/she is an important part of their care regimen, but also encourages him or her to perceive that the practitioner values them. Empowering patients, by allowing them to be an active participant in their own care can also improve patient confidence and self-awareness and could potentially directly enhance overall health status. Improvement of health-care systems is another generally positive consequence of adherence. In their study, Berben, De Geest, Dobbels, Engberg, and Hill (2012) concluded that individual characteristics were not the only reason that individuals are non-adherent, but note that multiple factors including environment, attribute to its prevalence. Ackloo, Hayes, McDonald, Sahota and Yao (2008) reported that non-adherence to medications could stem not only from patient individual factors but may also include drug and prescriber-related factors.

Therapeutic Medical Management of Hypertension

Therapeutic medical management is an essential component of overall hypertensive management and reduction of end organ damage. The concept used in this study will comprise of all actions to reduce disease burden. The management of any chronic disease process is not exclusively confined to medication regimens, but must include therapeutic lifestyle changes, such as dietary considerations, exercise, and cessation of usage of tobacco products and alcohol (WHO, 2013). Another definition and list of defining factors that this researcher finds useful and will therefore use as a structure to define therapeutic adherence in this study, is the definition from the International Society on Hypertension in blacks (ISHIB), a consensus statement detailed by Flack et al (2010). In this consensus statement, Flack et al. (2010) listed normal weight for height, a diet high in grains, fresh fruits and vegetables, and use of healthy instead of unhealthy fats, the diet also called for low sodium, high potassium, and adequate calcium. Like

WHO, they stressed limit of alcohol, the elimination of tobacco and the implementation of daily physical activity (Flack et al. 2010). Adequate assessment of the innate aspects of the barriers to adherence and how these behaviors may affect successful medical management is an essential component of reducing the overall burden of chronic illnesses, such as hypertension.

The new mandates from the Eight Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure (JNC-8) requires factoring elements, such as the recognition of coexisting disease processes like diabetes mellitus (DM), and end-stage renal disease (ESRD), the age of patient and the distinction of Black vs. Non-Black as crucial elements of successful hypertensive care management (James et al, 2014). These new care guidelines as designated by the JNC8 speak to the requirement of looking not just at the disease process, but also factoring components of the individual that may influence the overall management. Adherence to treatment regimen is a crucial component of care and recognizing the barriers that deter adherence to these treatment regimens tremendously impact care.

The definition of therapeutic adherence in this study will closely adhere to that defined by the WHO, CDC and, ISHIB. It is identified as behaviors, such as taking prescribed daily antihypertensive pills, adhering to a diet low in sodium and fat but high in potassium, attending regularly-scheduled and follow-up visits with a physician or other medical healthcare provider, eliminating tobacco use, decreasing alcohol intake and employing an active weekly exercise regimen. Employing measures such as these have all been identified throughout the literature as necessary components of standard hypertensive care management, and therefore represent sound clinical mandates to appropriate hypertensive care. The mandates of the above description will be the factors used to evaluate medical therapeutic adherence in this population.

Statement of the Problem

Adherence to any therapeutic medical regimen is multidimensional. Factors influencing this behavior go beyond neglect and financial constraints. Exploring beyond the surface can reveal immense insight about the reasons patients are adherent or non-adherent. This concept has been studied in various populations with researchers investigating societal, individual and even political aspects that may deter consistent conformance for different individuals.

Even though the United States of America mandates the healthcare system of the US Virgin Islands, the rate of hypertension among this population far exceeds the vast majority of states on the mainland. There are likely multiple factors contributing to the prevalence of hypertension in this populace. Non-adherence to therapeutic regimen has been identified in many studies as a tremendous factor contributing to hypertension prevalence globally, with minority populations showing the highest risk of this behavior. Statistical analysis continues to show that the prevalence of this disease among this group is exorbitant accounting for the demise of a vast number of its citizens. Merely producing the statistics without identifying the prime contributors of the problem could prove detrimental. Non-adherence to antihypertensive therapeutic regimens has been viewed as a primary factor in poor control of hypertension (WHO, 2003). Uncontrolled hypertension is responsible for a vast number of untoward effects of morbidity and mortality.

Purpose of the Study

The purpose of this Grounded Theory study is to explore the various factors that may influence hypertensive therapeutic adherence practices of the hypertensive United States Virgin Islander in relation to HTN. The researcher will also attempt to identify the US Virgin Islanders' basic understanding of the disease process and of the therapies used in treatment. The researcher will employ a grounded theory method to investigate the social processes that drive this

phenomenon and develop a substantive theory that addresses the therapeutic management of hypertension in the United States Virgin Islands.

Research Questions

1. What are the critical factors that influence therapeutic adherence in the hypertensive US Virgin Islander?
2. What are the attitudes, behaviors and beliefs of the US Virgin Islander that directly or indirectly influence adherence to hypertensive therapeutic measures.
3. What are the critical factors of the social structure of the United States Virgin Islands that influence adherence to hypertensive medical therapeutic regimens?

Philosophical Underpinnings

A philosophical underpinning is the basic structural reality of knowing that creates the foundation and informs the entire architecture of a study. A theoretical perspective represents the metaphysical deportment that informs the fundamental design of a study (Crotty, 1998). There are currently several theoretical perspectives that inform scientific inquiry. These perspectives are categorized by several methodologies, which may be employed when attempting to gain insight into a phenomenon. Epistemological viewpoints instruct how knowledge about a phenomenon is attained (Crotty, 1998). To determine the methodology that will adequately evaluate a phenomenon, the researcher must explore the philosophical knowledge compelling the phenomenon being studied (Creswell, 2014). The selection of a methodological method and paradigm of inquiry are also highly dependent on the research question that is being explored about a particular phenomenon (Crotty, 1998).

Qualitative Research

Qualitative research is informed by the constructivist, postmodern, interpretivist approach of scientific inquiry. In this realm, truth is inductively derived and comes into reality only through constant interaction with the environment (Crotty, 1998). The researcher examined and determined the most appropriate paradigm to explore the phenomenon of adherence as it pertains to HTN in this population. The postmodern constructivist paradigm denotes that meaning is obtained through interaction with environment through rituals and workings of a communal unit (Crotty, 1998). The researcher and the researched together construct a reality based on the experience of the individual and the researcher's experience during the interaction of data collection (Creswell, 2013). The elements described are the necessary constructs that would allow for intricate evaluation of this subject in its purest form.

In qualitative inquiry, knowledge is not a finite process but rather an active development that is ever fluctuating and evolving (Munhall,2012). It is imperative to understand meaning when describing human encounters. Qualitative research allows for that upfront understanding of the human experience from an individual perspective. The best way to understand why a person lives, breaths or even exists is to understand what these attributes of life mean to that individual. This is the basic concept of a postmodern form of scientific inquiry. Behavior driven by meaning is the basis of most research endeavors of the social sciences and the core perspective of qualitative inquiry.

Qualitative inquiry attempts to answer the why and how of an occurrence from multiple perspectives that allow for meaning to be assimilated with the experience. These methods do not attempt to single-handedly define the phenomenon of interest, but rather to explore and comprehend it (Creswell, 2013). In a qualitative approach, data collection is usually done within

the environment of the participants, and is gathered by talking directly to the participants and observing not only the verbal but also the nonverbal cues exhibited by the patient. In this form of inquiry, the researcher and the patient are both active parts of the research process. Creswell refers to the researcher as the "Key Instrument" (2013, p. 45). This title is fitting, because it describes the intricate involvement of the researcher in the study. The inductive process of arriving at themes in the qualitative process is a system of constant comparison of the data to arrive at an elucidatory set of themes that offers discernment into the workings of the phenomenon that is been explored.

The philosophical assumptions that inform qualitative inquiry seamlessly structure the foundation for this study. This study attempted to uncover the intricate and individual characteristics of this population as those characteristics relate to adherence practices to HTN and how it shapes healthcare decision-making behaviors. When investigating a social phenomenon that is not well studied, the ontological assumptions of qualitative inquiry which exemplifies truth as an unstructured, multifaceted and fluid occurrence are not rigidly- defined by any theoretical constraints. This is the principle that helps the researcher to assimilate the meaning the participant ascribes to an occurrence without question. There are five philosophical assumptions that inform scientific inquiry. These are ontological, epistemological, axiological, rhetorical, and methodological. Ontological from a qualitative perspective focuses on the meaning of truth. Truth consists of various aspects and cannot be defined only by one individual encounter (Creswell, 2013). This study will attempt to uncover the truth that the US Virgin Islander ascribes to hypertension and to its therapeutic management; the researcher must understand the grounds of qualitative ontology to hear the participants' voice clearly.

Epistemological qualitative views posit that knowledge occurs by interacting intimately with the researched to establish truth in its authenticity (Creswell, 2013). This study was conducted in the US Virgin Islands. The researcher traveled to all three Islands so that she could interact with each participant individually in the element of their environment. The framework of this study allowed the researcher to get to know the participants and their environment. Each participant was interviewed individually to hear his or her truth. This was followed by a focus group that helped the researcher to authentically induce the previously identified themes in the study. This aspect of the study was conducted with named experts as a conduit to aid in fostering as much dependability and clarity in the knowledge obtained as possible. The researcher transcribed the interviews verbatim so that the findings represent the purest voice of the participants. This process speaks to the epistemological philosophical viewpoint of qualitative inquiry, which calls for authentication of the established truth through researcher/participant interaction.

The Axiological assumption of qualitative inquiry presents values and norms as individual assets and is to be respected, even though these values may haphazardly impact the research (Creswell, 2013). The axiological assumption of qualitative inquiry takes into consideration the values and norms of a population and details that these may indeed impact the research, but must be esteemed within the study. This study examined the US Virgin Islanders as a group and highlights the unique attributes of this group that may impact the way these individuals view hypertension and how these views impact adherence. The axiological assumption allows for the cultural aspects of this society to be explored. This assumption facilitated the probing of the social contributions of this phenomenon to be explored thoroughly in this study.

The fourth assumption of qualitative research is rhetorical. The rhetorical process of qualitative inquiry examines the research process and describes it as a formative storytelling process (Creswell, 2013).

The fifth assumption is methodological, which describes the procedure and semantics of the research. With this assumption, the researcher inductively approaches the data analysis to produce themes that describes the intricacies of the research process (Cresswell, 2013) The methodological assumption will be represented using coding and identifying categories that could then formulate themes that would then be analyzed to formulate theories that would speak to the phenomenon of hypertensive therapeutic adherence in this population.

There are several methods that come under the qualitative methodology that offer a more interpretive postmodern constructivist perspective of a phenomenon. Grounded theory is the best qualitative research approach, based on the research questions posed for the study. Creswell (2013), reports that Grounded Theory is a research approach in which the researcher produces an enlightenment of a method, an action, or interaction shaped by the views of a large number of participants. The lack of substantial literature surrounding the behaviors as they relate to adherence calls for a research method such as a grounded theory to formulate a substantive theory grounded in the data.

Grounded Theory

Barney Glaser and Anselm Strauss are the credited founders of this process; they introduced the method to the public in1967 (Creswell, 2013). The Grounded Theory research process evaluates a social process with the intension to derive the unalloyed knowledge that conceptualizes emerging truth and elucidates that phenomenon (Lars-Johan, 2011). This method foregoes the practice of compartmentalizing a social phenomenon through preconceived fallacies

that may evade the realness of the concept being studied (Lars-Johan, 2011). Grounded Theory has evolved to take on new identities through the emergence of various approaches. However, the basis, which explains social processes through the voices of participants of the process, has maintained consistency through all the approaches. The procedures undertaken in a grounded theory study ultimately seek to present a substantive theory that is grounded in the data (Creswell, 2013).

The role of the researcher in Grounded Theory is an active rather than passive one. Data analysis and collection are simultaneous processes resulting in the creation of a middle-range theory that describes the phenomenon (Creswell, 2013). The creators of this process have origins in two distinctly opposite schools of thought. Barney Glaser had a background based predominantly in quantitative inquiry, while Anselm Strauss' background was predominated by qualitative inquiry. The unification of the two created a methodology that presented just enough objectivity and subjectivity to provide sound analysis of a phenomenon. This method uses various levels of coding and sampling to provide rigorous analysis of the data that captures the voice of the participant and relays it as the only influence portrayed in the identified truth. After some years, Glaser and Strauss parted ways, due to differences in how they both conceptualized Grounded Theory. This split eventually yielded different schools of thought surrounding the basic procedures needed to carry out research using sound Grounded Theory methodology (Creswell, 2013).

The philosophical tenets that inform Grounded Theory are formulated through the constructs of symbolic interactionism and pragmatism. This research process uses both inductive and deductive methods to collect and analyze data, which is used to formulate theoretical perspectives that inform phenomena. The goal of this method is to explore social processes and

to generate a theory grounded in the data that describes adherent behavior. When investigating the tenets of a social structure that informs phenomena, the researcher must evaluate the characteristics of the society that drive this behavior. Grounded theory with its tenets, allows for the researcher to evaluate the societal symbols that constitute meaning using approaches through which the participant's voice resounds. The core structure of Grounded Theory methods speaks to the symbolic interactionism and pragmatism (Cresswell, 2013).

Symbolic Interactionism

Symbolic interactionism as described by Herbert Blummer (1998) is the understanding that thoughts, beliefs and objects are symbolst humans use to interact with their environment or society to formulate meaning. Blummer continued the work of his teacher and mentor George Herbert Mead, with his work and publications on symbolic interactionism. He identifies several physiognomies of symbolic interactionism. The first described here is human interaction; he affirms that all activity of society is based on the interaction of the humans that populate it. Another characteristic that Blummer (1998) identifies with symbolic interactionism stresses interpretation; he defines this as a demarcation between incitement and reaction: meaning humans interpret events, objects or belief based on what they decipher that the belief, object or event holds. Their response is not merely a reaction to the event, object or belief itself (Blummer, 1998).

Blummer (1998) speaks to three essential concepts of symbolic interactionism. The first concept is denoted as symbolism. Symbolism according to Blummer's distinction is that people react to things in the physical, emotional, mental and spiritual realm by the meaning these things has for them. The meaning that they associate with the object, situation or emotion becomes a symbol with which this individual associates behavior. Every interaction that this individual has

with this thing evokes the same type of behavior from that individual. The second concept of symbolic interactionism as proposed by Blummer (1998) is interactive determination. This premise clarifies that meaning is contingent upon the relationship an individual has with other individuals. He stresses that although a person may assimilate one type of meaning to a thing, the social interaction with another person can provide new insight that would ignite new meaning for that individual. People perceive meaning for a particular object or circumstance based on their society's interaction or none-interaction with that object or circumstance. This aspect of symbolic interactionism suggests that individuals in different societies ascribe different meaning to similar objects or beliefs. The individual meaning reflects the significance the object or the belief has for each individual society.

The third concept is emergence and human agency. This premise ascertains that meaning is modified through the receptive lenses of the individual experiencing the thing. The human agency factor denotes that the meaning given to something is never permanent but can change with the individual's interaction with everyday life (Blummer, 1998).

Blummer maintains that human behavior cannot be determined based solely on the factors outside of the individual, but maintains that meaning must be evaluated as an intrinsic component of that influence in day-to-day actions and interactions (Blummer, 1998). The views and interpretations of meaning held by symbolic interactionism is like that of the philosophical views of relativism, which suggests that human interpretation of significance is an essential component that drives human behavior (Blummer, 1998). Blummer (1998) also maintains that individual perceptions that drive behavior are innate to that person. One cannot study phenomenon without understanding the impressions of the distinct implications that these

concepts impress upon a person (Blummer, 1998). Behavior cannot be curtailed to echo mere circumstance, but must be evaluated based on the intrinsic assimilation of individual principles.

Pragmatism

Pragmatism is the other theoretical perspective of Grounded Theory. The seeds of theoretical viewpoint originated in the United States in the 1800s. The primary contributors to this philosophical stance were Charles Saunders Pierce, Wiiliam James and John Dewy (Bryant, 2009). Pragmatism has evolved over the years into what is known and thought of today; its basic premise is that we come to know by how we acclimate to our environment and that only those things that we know or experience are real (Bryant, 2009). According to the auspices of pragmatism, truth is relative and developed inductively but must have some deductive component (Bryant, 2009). Most importantly, the truth per pragmatism is that it must be sensible with sound applicability (Bryant, 2009).

John Dewey disapproved the supposition of pragmatism as a view of knowledge as a passive reflection of reality that is dormant and anticipating discovery. He instead restated it as an action oriented interaction with reality that shows its usefulness based on the participants' acceptance of that precise authenticity (Bryant, 2009). The general focus of this philosophy delineates focus on the research outcome, and the means by which these outcomes are obtained are merely circumstantial and should not be emphasized. Emphasis is solely on the final product; the empirical knowledge ascertained or the truth divulged (Creswell, 2013). Pragmatists see knowledge as evolutionary theories, applicable at one moment in time and capable of changing and adapting to what works for the subjects applying that knowledge (Bryant, 2009). The adaptation of a hierarchical affirmation of knowledge from which truth is derived is viewed as fallible and incapable of accurately representing reality (Bryant, 2009). The overall message

derived from this philosophical stance denotes that veracity by any means must give way to practicality, malleability, and applicability.

Strauss and Corbin Grounded Theory

There are other Grounded Theory methods that could be used to investigate this phenomenon. However, the Grounded Theory approach as delineated by the Strauss and Corbin method is the approach used to inform this research initiative. There are other methods that come under the Grounded Theory methodology that offer this type of subjective holistic perspective of a phenomenon. However, the method that would best give tremendous insight and lend greatly to the understanding of this study's research questions would be the Grounded Theory approach as delineated by Strauss and Corbin. The philosophical tenets of Grounded Theory are apparent in this subset of the grounded theory method. The pragmatic views are evident with the method's use of deductive and inductive methodologies to derive a substantive theory that could adequately explain the phenomenon in question. Pragmatism requires that research should not be purely inductive or purely deductive but should have components of both to arrive at data that is practical. The simultaneous data collection and interpretation of the Strauss and Corbin approach is for both inductive and deductive reasoning to be ascertained.

The approaches used to analyze the data are incorporated systematically so that the participants' voices are not lost in transcription. The importance of hearing the meaning of a phenomenon as it relates to the interactions of society is the main components expressed by Blummer in symbolic interactionism. This study investigated behaviors related to health. These are influenced by social structure and societal norms and can therefore directly impact how individuals respond towards health and wellness. Studying how social structure impacts behavior aids in the understanding of overall human interaction and can significantly highlight adherence

practices. The Strauss and Corbin's methodology is the best method to use when inductively deducing data that could interpret the social symbols that gives meaning to human interaction within a social structure. This study requires that a connection between social and psychological processes be explored in a subject matter that has never been investigated. Using a methodology that incorporates an abductive form of analysis such as Strauss and Corbin's Grounded Theory facilitates the most effective and thorough investigation of this phenomenon possible.

Significance of the Study

Adherence to therapeutic hypertension management is a multifaceted phenomenon that necessitates the partnership of multiple stakeholders, involving governments, civil society, the healthcare industry and the food and beverage industry (WHO, 2013). Controlling this disease process will render immense benefits to the public welfare of the people of the United States Virgin Islands. Reports from the USVI Department of Health (2003) indicate that US Virgin Islanders are disproportionately affected by hypertension. Statistics by WHO and the CDC identifies that medication non-adherence in the hypertensive patient population continues to be a major cause of global vascular compromise. The Health Education Authority (1998) asserts hypertension as the leading cause of death and disability in the African-Caribbean community and asserts that cultural factors contribute to the prevalence of hypertension. There is no identifiable literature regarding therapeutic adherence practices among persons from the USVI. A study of this magnitude could prove instrumental in coordinating education and treatment strategies for hypertension among persons of this population.

It is important to understand how the hypertensive patient from this region evaluates the concept of health, or being healthy. It is also imperative to appreciate their concept of adherence to a therapeutic regimen and distinguish if they have current fears or reservations pertaining to

prescribed medical regimens. It is imperative to ascertain if there are any social, economic or other constraints of health policy that impact adherence practices. The ultimate goal of this study was to evaluate the various attitudes and beliefs that may affect adherence to hypertensive therapies among persons from the US Virgin Islands. It specifically attempted to examine fears, declarations, and perceptions of having to take medicines on a day-to-day basis, adhering to specific dietary regimens and employing physical exercise and stress reduction measures. Perceptions of health and how this concept is affected by having a chronic illness such as hypertension were explored. The researcher also explored this population's basic understanding of the hypertensive disease process and the implications of treatment measures and desired treatment goals. This study presented a broader understanding of the implications of the overall social structure of this community as it relates to treatment of this chronic illness and it afforded the opportunity to provide better future assessment of hypertensive therapeutic medical management among this population.

Significance to Nursing

Safe and effective therapeutic interventions are the driving forces behind appropriate patient care and overall optimal patient outcomes. The necessity to improve safe medication administration has resulted in the implementation of electronic medication records and more astute prescribing practices among practitioners; however, the problem of medication adherence still presents tremendous morbidity and mortality risks for hypertensive patients. The problem of non-adherence adversely impacts effective and efficient therapeutic outcomes among patient populations and therefore presents a tremendous healthcare burden. The literature surrounding medication adherence in the population from the United States Virgin Island is non-existent and

as such presents tremendous healthcare disparities. The need to evade the deleterious effects of this phenomenon must be astutely addressed.

Nurses interact with the chronically ill more than any other health care professional. The goal of all nursing care revolves around providing scientifically sound and artistically intuitive care that promotes substantially constructive patient care sequels. A significant aspect of making sure that these goals are met is reflected in the nurses' abilities to individualize care to reach each patient. A tremendous aspect of nursing care revolves around safe and effective medication administration. This administration of medications does not stop at ascertaining the right route, patient, and dose but has evolved to investigating barriers that may deter adherence even when these other factors appear optimal. All factors that evade adequate medical therapeutic interventions will ultimately deter optimal patient outcomes and are therefore primary nursing issues that require investigation from a nursing lens. The nurse must understand the intricacies of health as experienced by the US Virgin Islander in order to intuitively make informed choices regarding patient care delivery and education. Understanding the overall social influences on health, wellness, and the importance of these influences on creating a sustainable livelihood among person from this population will facilitate the implementation of successful care regimens that would ultimately produce favorable outcomes.

The evidence of the immense healthcare disparity among this population makes this an imperative nursing issue and mandates timely intervention from all healthcare disciplines. Scientific inquiry into the root cause of the prevalence of this disease process must be undertaken with vigilance, and evidence-based interventions should follow with the same matter of urgency. This population is most negatively affected by this ailment and determining the primary cause of this human suffering is without a doubt an issue for the most vigilant and agile patient advocate,

the nurse. Nurses must be judicious at recognizing populations who are at risk for non-adherence, so that clinically acceptable interventions can be implemented to deter this and improve outcomes.

Implications for Nursing Education

Evidence-based medicine has been the mantra in healthcare for some time; however, healthcare providers must recognize that care delivery cannot be a one-size-fits-all phenomenon. Studies such as this that evaluate the intricate healthcare structure of various cultural subsets provide a platform for best practices and serve as educational forums that informs all aspect of healthcare. Best practices outcomes are scientifically driven and are ultimately what evolves as clinical guidelines from which educational curriculums are established. These best practices are used for educating nurses as they enter the profession. Nursing science is the construct of nursing theories formulated through nursing research. All theories that inform practice must be reflective in the nursing literature. Studies such as this may provide a platform for nursing education through the formulation of a scientifically-driven theoretical framework as it pertains to health among the persons of this culture. Culturally-specific care will inform the educational aspects of health promotion and disease prevention, which will provide nurses with the culturally-appropriate therapeutic skills necessary to provide adequate care to this population.

Implications for Nursing Practice

Nursing practice has evolved from its original image of subservience to a professional model of healthcare advocacy and reform. The nurse is the patients' advocate and in this realm, must be implicitly cognizant of the constraints within society that would impact optimal care. The knowledge of factors that may impact adherence to therapeutic hypertensive management in the United States Virgin Islander is imperative to provide optimal preventive

care that would alleviate the disease-associated burdens of this population. The nurse at the bedside, in the clinic, the office or even the ambulatory care setting must be equipped with the right tools to take care of the patient. Tools in this domain are not restricted to medical equipment, but entail any knowledge that facilitates population-specific care that can improve patient care outcomes. This study may present the community with a broader understanding of the many factors that may influence adherence as it relates to treatment of a chronic illness such as hypertension. In addition, it may afford the opportunity to provide better future assessments of treatment adherence among this population.

Implications for Nursing Research

Nursing practice is built on theories derived from nursing research. Such theories are the driving forces behind scientific nursing practice that results in favorable patient outcomes. The nurse must provide evidenced-based care that is adequate, individualized and reflective of the needs of each patient to eliminate healthcare disparities. The nurse should demonstrate not only expertise in clinical knowledge, but should also demonstrate cultural competence thus facilitating optimal patient outcomes (Wasti et al., 2011). It is imperative for the nursing literature to express an interest into the understanding of the factors that influence the knowledge, attitudes and beliefs of this population as it pertains to hypertension and its management. The acquisition of this knowledge will increase advocacy and overall direct patient care. It will allow nursing care to be fundamentally precise and reflect the individual needs of this population. This study generated a theory that could further be explored and tested. This study and its findings could help generate scientific discussions that could highlight and facilitate the need to explore similar factors among other cultural subsets with similar healthcare needs and adjust public policy to adequately meet these needs.

Implications for Health/Public Policy

Hypertension is a global health problem that continues to cost the institution of healthcare several millions of dollars annually. The magnitude of this problem goes beyond individual responsibility and extends to governmental and stakeholder concerns. Measures to alleviate the burden of the impact of this disease process must be maintainable, reasonable and effective and therefore warrant a multisystem approach (WHO, 2013). Non-adherence with hypertensive therapeutic management has been documented in the literature as a significant causative factor for the continued prevalence of this disease and the significant numbers of individual morbidity and mortality sustained by it. Systems aimed at sustaining healthcare initiatives involve healthcare policy makers, health care providers and health systems managers. These agencies must collaborate and use scientific based data to evaluate and intervene to improve health outcomes.

Recent updates on the JNC 8 guidelines for the management of hypertension included the recognition of differences of hypertension among blacks and non-blacks and calls for management to reflect such. Changes to these guidelines also addressed differences among the elderly and mandated parameters to facilitate these in the everyday management of these patient populations. The decree for these new guidelines as outlined by James et al (2014) were based on evidence from multiple randomized control trials which indicated that this disease process behaved differently in these populations and therefore mandated variations in treatment measures in order to attain successful care outcomes. This paradigm shift in hypertensive management has had direct impact on healthcare policies. A study of this caliber will create evidence that will likely create discussions that could eventually propel nurse researchers to conduct further qualitative research and new cross sectional or longitudinal type research that would evolve

public policy to a global sphere accounting for the intricate nature of the human psyche as it influences medical care adherence.

The Joint Commission Association is the accrediting body for the hospital on the Islands. Consequently, the mandates for hospitals in the United States Virgin Islands and here in the states are the same. The Center for Medicare and Medicaid is also a driving force in the health care initiatives on the island. These agencies have both identified acute myocardial infarction, heart failure and stroke as health care priorities. All three of these ailments are potential sequels of hypertension. This amplifies the significance of this disease process and the need to curtail its prevalence.

Scope and Limitations of the Study

The scope of this study is to identify the social tenants of this cultural group that contribute to or deter adherent behaviors as it relates hypertensive medical therapeutic regimens in the person from the United States Virgin Islands with this disease process. This study also explored the cultural tenets of health and healthcare that drive the healthcare practices of this group. The researcher attempted to comprehend US Virgin Islanders' understanding of hypertension and of the therapeutic medical management required to keep this disease under control. This study utilizes the Grounded Theory methodology informed by Strauss and Corbin to investigate this phenomenon and make a determination if adherence behavior can be categorized as the prudent factor that contributes to the significant prevalence of this disease process among this population.

There are several potential limitations of this study that the researcher must consider relevant. One limitation is the location of the study. The researcher would have to travel back and forth to obtain interviews and transcribe these interviews, with this time factor of travel and

delay in follow-up, there may be a time constraint that prohibits adequate follow-up with research participants to verify that transcriptions are accurate. This may also result in loosing data that may be important to the overall outcome of the study. Another potential limitation is the fact that the researcher is a native of these Islands and does have some preconceived ideas of the behaviors that may influence data interpretation. The fact that the researcher is a native of the US Virgin Islands may also cause the participants to be partial, causing them to answer questions the way that they think the researcher may want them to answer so that they can assure that she is successful in this endeavor.

Chapter Summary

This Chapter introduced the study topic, population, and philosophical guidance to study. It provided an overview of the background elements that drive this study. The purpose of the study and the proposed research questions were delineated. This chapter introduced the philosophical tenets that guide the general foundation of the study. It spoke to the significance of this study to nursing practice, nursing education, nursing research and public policy. The overarching goal of this research is to shed light on critical factors that promote or deter adherence to antihypertensive therapeutic regimens among hypertensive persons from the United States Virgin Islands. A qualitative methodology using a grounded theory approach was used to generate a theory to explain this phenomenon.

CHAPTER TWO

REVIEW OF THE LITERATURE

The current literature surrounding adherence practices as it relates to the hypertensive individual globally is immense; however, there are currently no studies that evaluate this behavior in the individual from the United States Virgin Islands. The overall aim and purpose of this grounded theory study is to evaluate the critical factors that impact adherence to medical therapeutic regimen in the hypertensive individual from the United States Virgin Islands. To approach a study from a scholarly and academic perspective, a review of both the current and historical literature describing past and current undertakings related to the phenomenon being studied is prudent. The purpose of a literature review in a qualitative grounded theory study is to give the researcher an idea of the existing literature as it pertains to the subject being explored. This acquired knowledge precludes replicating investigations into the same occurrences using similar samples and invariably duplicating identical scientific outcomes. Reviewing the literature also identifies current gaps that exist regarding the phenomenon of interest and compels the researcher to concentrate on these deficits in order to produce new and relevant scientific knowledge.

To establish the basis for this clinical investigation, a search of the current and historical literature was done using the Barry University Library online resources to access search engines such as Cochrane, Science Direct, Elsevier, Cinhal, EBSCO, OVID, and ProQuest. The World Wide Web was also utilized to access the websites of The Center for Disease Control, The United States Census, the United States Virgin Islands Department of Health, Pan American Health Organization (PAHO) and the World Health Organization web site. Google Scholar was

also utilized and studies from Pub-med were accessed through this search engine. Key words and phrases used in the search were: hypertension, adherence, non-adherence, compliance, concordance, multiculturalism and health care, hypertension risk factors, Afro-Caribbean, United States Virgin Islands, cultural practices and hypertension, education and hypertension, knowledge deficit and care management, therapeutic management with hypertension and health perceptions and the United States Virgin Islander. The literature search was conducted in English and restricted to peer-reviewed scholarly journals. It included both qualitative and quantitative forms of inquiry. Newspaper articles were reviewed to access information about the Caribbean Islands, and the literature search was generally restricted between the dates of January 1st, 2009 to present; however, evaluating the historical context and certain intricate aspects of this subject matter mandated retrieval and evaluation of literature from as far back as the 1970s.

This literature review established that there is a significant paucity in the literature as it pertains to healthcare and healthcare practices of persons from the United States Virgin Islands. Statistics continue to show that hypertension causes a tremendously negative impact on morbidity and mortality among people from this territory; however, delineation of causative factors has not been thoroughly explored. There is currently an abundance of literature on adherence and the impact of non-adherence on morbidity and mortality among clients with chronic illnesses such as hypertension. The literature isolates several causative factors that dictate adherence-related behaviors and there are still many researchers considering variants of these behaviors among cultural, ethnic, gender and even age groups. The commonalities delineating adherence behavior within groups are astounding and speak to the notion that social structure significantly shapes these behaviors.

Evaluating the individual characteristics of the United States Virgin Islander and how these may shape adherence practices as it relates to therapeutic hypertensive management is an important investigation that must be undertaken. This study explored the manner in which adherence-related factors are major contributing circumstances that enhance the prevalence of hypertension among people from this population. Since the literature surrounding this population is so scarce, to understand this phenomenon concisely, the researcher must explore all aspects of adherence-related research and evaluate these implications in hypertensive management seen in other populations and ethnic groups. The literature review presented here will inform on the morbidity and mortality related to adherence, and the factors that influence adherence in other chronic diseases. This review will also look at perceptions of health and healthcare of the United States Virgin Islander and factors that influence these. This information helped the researcher to conceptualize adherence and provide insight for this study.

This section will provide a historical background for this study. This chapter will offer an exploration of the historical perspective on adherence and hypertension; it will examine the way that the healthcare community has evaluated these concepts over the years and the developments that these outlooks have propagated. It will also evaluate hypertension in blacks and it will address physiological factors that promulgate hypertension in persons of this ethnic origin. It will also evaluate non-physiological implications that nurture beliefs, attitudes and other barriers that may impact medication adherence. It will assess the social, economic, and educational barriers within this group that continue to impact adherence practices. Another subject matter that will be addressed in this section is adherence; it will explore the past and current documented factors that impact adherence behaviors will also broadly evaluate how adherence is affected in various cultural, ethnic and social groups. This section will also expose the reader to the author's

experiential content. This details the author's experience with the subject matter been studied. Exposing the author's views allows for the biases to be assessed in advance so that they are not implicated in the study findings.

Historical Context

Adherence

The development of the adherence concept begins with a review of the term "compliance". Compliance was the first term initially utilized to describe treatment-related behaviors in healthcare. According to Shay (2008) prior to 1996 'compliance" was used much more than "adherence". The research for compliance spanned over many years but was initially started back in the 1970s at the MacMaster Medical Centre workshop/symposium on compliance (Berben, Dobbels, Engberg, Hill, and De Geest 2012). Eduardo Sabate and Robert Hayes are two researches who had some of the most important initial work on compliance/adherence in medicine. Their definitions later became the most criticized views after thorough analysis was undertaken. Both definitions by Sabate and Hayes showed care delivery from a paternalistic perspective, putting the healthcare provider as the dictator of care and the patient as the subservient recipient who merely followed instructions without input (Kyngäs, Duffy, and Kroll 2000). Compliance became a less-favored terminology when describing patient and provider interaction, because of its portrayal of the patient as a submissive, silent and non-interactive participant in care (Cushing and Metcalfe 2007).

Adherence replaced compliance in many health care settings as a more patient- friendly, more empowering and less punitive terminology that described healthcare behaviors. Authors Berben, Dobbels, Engberg, Hill, and De Geest (2012) in their analysis show adherence as more of a transitionary term from compliance rather than a completely separate phenomenon. Their

review showed the terms merging around 1987 with a transition of the usage of the term "compliance" to a wide adaptation of the adherence term. The initial definition of adherence was exactly that of the term compliance; however, the WHO redefined the term in 2003 to include the patient as an active participant in care rather than taking the previously described passive role. In 2005, Balkrishnan in his study redefined the adherence concept again to highlight the client's participation in the agreed upon regimen. There continues to be confusion among members of the healthcare community as to the definition these two terms and thus there is continual interchanging of terminology across healthcare today. There is, however, an agreement between the medical, behavioral and social sciences that adherence as it is defined by WHO is the most appropriate terminology when it comes to planning and implementing patient care initiatives.

Hypertension

Before 1949 and the Fragminhan study, there was great uncertainty about how, when and if hypertension should be treated (Kannel, 2000). Normal blood pressure as late as the 1940s was documented as 100 mmhg plus the patient's age this calculation method left many people with severely elevated blood pressures which put them at increased risk for health complications (Kannel, 2000). In the 1940s there was clinical evidence that this disease was the precursor for serious health compromise; however, this evidence was not highlighted as significant (Moser, 2006). Left ventricular hypertrophy, a known health-modifying squealer of untreated hypertension, was considered inconsequential even back in the early and mid-1900s (Kannel, 2000). Moser (2006) uses President Theodore Roosevelt's story as an example of how untreated hypertension impaires cerebral and cardiovascular health. Per historic documentation, President Theodore Roosevelt was reported as having very high blood pressure levels with documented

systolic blood pressure as high as 260 that went untreated as he suffered from heart failure and a series of strokes (Moser, 2006). As late as the early 1950s the health-care community continued to have some fallacies that hypertension was not only benign, but that it was beneficial for the patient. There was a definite lag in the health care community's recognition and acceptance of the overt dangers of hypertension and its significant detrimental effects to individuals that it affects (Moser, 2006).

The Framingham study was started in 1949. It was instrumental in connecting cardiac mortality with untreated hypertension (Kannel, 2000). Initial emphasis for treatment of hypertension was only focused on the diastolic blood pressure and treatment was not initiated until these were elevated at a certain level. The Framingham studies soon disputed these as false and showed that complications of hypertension were indicated by changes in the systolic as well as the diastolic blood pressure elevations, but that there was a more direct relationship between the elevated systolic pressures and cardiac disease (Kannel, 2000). The development of epidemiological studies for hypertension soon showed hypertension as more of a risk factor for vascular disease (Kannel, 2000).

All statistics that analyze the impact of hypertension globally indicate that this disease process creates a substantial financial healthcare burden. Statistics from the major healthcare task forces such as WHO and CDC show that although there are numerous treatments currently designated to avert the detrimental consequences of this disease process, its prevalence remains substantial, accounting for a clear majority of deaths from heart disease, strokes and kidney failure. The CDC and WHO delineates non-adherence practices as significant contributors to the prevalence of Hypertension. These major health surveillance agencies have also isolated persons of black ethnic origin as highly susceptible to sustain the detrimental health effects of this

disease process. Various studies completed on adherence in the hypertensive population have identified several individual and population-based characteristics that contribute to non-adherence. This literature review will explore these identified characteristics and will use these in this study to help articulate findings as these relate to hypertensive therapeutic adherence in the hypertensive population from the United States Virgin Islands.

Hypertension in Blacks

The vast majority of people from the United States Virgin Islands are black, and although they have a strong Caribbean influence they also have roots in the African- American culture, and are considered African-American by virtue of the fact that they are of African descent and Americans by citizenship. Some of the influences that impact healthcare for African Americans may influence this culture. It is important for this researcher to evaluate the literature regarding ethnic considerations for hypertensive management among black people of African descent. There have been many studies that investigate the reasons for this significant number of individuals that are compromised by this ailment. The data indicates that there have been physiological and non-physiological factors that contribute to the prevalence of this disease process among blacks. These factors have been directly associated with the prevalence of hypertension among blacks in various instances, and have been shown in many studies to contribute to morbidity and mortality associated with the disease process.

Ogedegbe, Mancuso and Allergrante, (2004) conducted a qualitative study using detailed, open-ended one-on-one interviews that investigated the expectations of hypertensive treatment in a group of African American patients with the disease. The researchers used a sample size of 93 patients from the Cornell internal medicine associates primary care clinic associated with the New York Presbyterian Hospital in New York City. This study defined biomedical and non-

biomedical responses to classify participant responses. Biomedical responses were identified with those that were synonymous with traditionally-held approaches to treatment of chronic illnesses (the taking of medications and making lifestyle changes as a lifelong process) and the non-biomedical responses were identified as any response that differed from these. Semi-structured interviews were conducted to assess the participant's expectations related to their own responsibilities in their hypertensive management, the physician responsibility in their hypertensive management and the responsibility of the medications in their hypertensive management (Ogedegbe, Mancuso and Allergrante, 2004). The data analysis was done through coding of similar concepts identified in the field notes until sustainable themes were derived, and qualitative software was used to aid in coding patient's responses.

Field notes were analyzed using the Ethnograph version 5.0 qualitative software, which coded the reoccurring concepts into themes that later yielded three major categories. The categories identified were listed as follows: 1) expectations regarding patient's role in self-management, 2) expectations regarding the physician's role, 3) expectations regarding medication effects. These results showed that 51% of African- American individuals believed that their hypertension could not be cured, 38% believed that their hypertension could be cured, and 11% did not know. In response to taking medications for life, 48% believed that they would take their medications for life, 38% felt that they would not have to, and 14% did not know. In response to taking medications only with symptoms, 67% believed that they would have to take the medications regardless of symptoms, 23% felt that they would only take with symptoms and 10% did not know. Overall in this study 65% of the participants had some type of non-biomedical belief, 35% had no biomedical belief, and 15% of the entire study participants had all 3 non-biomedical expectations. The researchers recommended that future studies using this

population should use the role patient expectations as independent predictors of medication adherence should be conducted. The researchers also recommended that studies using educational interventions aimed at addressing non-biomedical expectations of blood pressure management should be undertaken.

Non-biomedical beliefs regarding hypertension management were also examined in Caribbean blacks with hypertension. Connell, Mckevitt and Wolfe (2005) conducted a qualitative study, which examined strategies to manage hypertension in a group of black Caribbean patients living in England. The study sample consisted 19 individuals between the ages of 40-75 years of age, who all sought care from one primary care practice in London. Of the nineteen participants, six were men, thirteen were women; fifteen of these were born in Jamaica, two were born in the United Kingdom of Jamaican parents, one participant was from Trinidad and the other was from Guyana. The researchers used open-ended interviews to collect data and used content analysis to identify recurrent themes. The main finding of the study indicated that the black Caribbean patient used both prescribed and traditional herbal remedies to control blood pressure. Factors that influenced these patients to use one remedy versus the included biomedical conceptions, faith in the effectiveness of the treatments, beliefs about how the body felt when illness was present, beliefs that hypertension could be cured and beliefs that pharmaceutical preparations can cause impurities in the blood.

The researchers identified a limitation of this study as the exclusivity of the sample setting being that they only utilized participants from one general practice office. Recommendations for practice were identified as an increased need for education regarding hypertension and its management from healthcare practitioners. Study researchers also indicated a need for healthcare practitioners to explicitly explain the meaning of normal blood pressure and

incorporate dialogues regarding a patient's discernment of illness in their plan of care discussions. The researchers indicate that an overall plan of care must be individualized to facilitate proper blood pressure management among different groups.

Due to the high prevalence of hypertension in blacks, research has been dedicated to unveiling whether there is a higher propensity for this group to have certain physiological characteristics that propagate predominance of this disease. Many researchers initially believed that renal artery stenosis was a significant factor in this population. Some other literature suggests that blacks are sodium retainers and are therefore more susceptible to high blood pressures relative to this sodium retention. Other studies have evaluated other physiological aspects of hypertension such as hormonal implications of aldosterone. The mandate to unveil whether these physiological factors are the primary culprits contributing to the high likelihood of hypertension in this population have led to many research studies in this area.

Masked hypertension is a significant factor that contributes significantly to hypertension morbidity and mortality. The pathophysiology is associated with impaired vasodilatation and endothelial function. Larsen, Gealaye, Waanbah, Assad, Daloul, William, Williams and Steigerwait (2014) conducted a longitudinal study investigating the prevalence of masked hypertension in this ethnic group and its contribution to morbidity and mortality in the African-American patient population. The study population consisted of 73 African-Americans who received care a primary care ambulatory internal medicine clinic in southeast Michigan. Each patient in the study was examined using 24-hour ambulatory blood pressure monitoring, and had their blood pressures monitored every 30 minutes while awake and every 60 minutes while sleeping. Patients were provided a diary to document their emotional states while blood pressure was been taken. Thirty-three individuals (45.2%) of the study population were noted to have

ambulatory hypertension. The prevalence of ambulatory hypertension in African-Americans indicates that there are likely physiological determinates of this disease in this population. The researchers of this study identified the study limitations were related to study's population, the sample was taken from clinics that were established and therefore may not have taken the entire populations of hypertensive blacks. These authors proposed that this topic be reinvestigated with a more population-inclusive sample.

Renal artery stenosis is well documented as one of the primary contributing factors to secondary hypertension. It was believed at one point that this process may have been a primary causative factor leading to the high prevalence of hypertension among African Americans. One of the primary studies that evaluated the presence of renal artery stenosis in African Americans was the 1982 study by Thomas A Keith, published in the *Journal of Hypertension*. Keith conducted a longitudinal study with a sample of 7200 hypertensive blacks with a diastolic BP of >/= 95 mm hg who attended University of Cincinnati Medical Center between the years of 1969-1979. Investigation included evaluation of sample patients with test such as Urinalysis, urine electrolytes, urine cultures, uric acid levels, creatinine, Blood urea nitrogen levels, fasting lipid profiles, white blood count, post prandial glucose levels, fasting lipid profiles, chest x-rays and electroencephalography. Patients with histories of recurrent upper urinary tract infections, family history of polycystic kidney disease or premature death from renal failure, onset of hypertension prior to age 18, accelerated or malignant hypertension, abdominal bruits, recurrent hypertension despite appropriate medical therapy, individuals with remote or recent history of abdominal trauma and individuals with abnormal urinalysis were tested with intravenous urography.

Renal arteriogram was considered the most conclusive diagnostic examination in renal artery stenosis and was performed on those individuals where rapid sequence urography

indicated renal artery stenosis, patients with abdominal bruits who responded poorly to antihypertensive medications, those with recurrent accelerated hypertension regardless of appropriate treatment and those who had a diastolic blood pressure > 100 mm Hg and has a previous arteriogram for some other reason that indicated renal artery stenosis. One thousand thirty-eight individuals from the sample met the criteria for intravenous urography and had the test performed. Of this population, only 112 were found to have renal artery stenosis. Of the 7200 black individuals involved in this study only 0.65% had a diagnosis of renal artery stenosis, therefore disputing the claims that this process contributes to the diagnosis of hypertension in this population. The researchers did not make recommendations for future studies in this area, but did indicate various clinical indicators that could require examination in the future.

The theory of hyperaldosteronism as a significant contributing factor to hypertension is noted widely in the literature. Grim, Cowley, Hamet, Gaudet, Kaldunski, Kotchen, Krishnaswami, Pausova, Roman, Tremblay and Kotchen (2005), conducted a cross case study to investigate the relationship of plasma aldosterone levels and blood pressure levels in normotensive and hypertensive individuals of blacks and whites. The normotensive group has systolic blood pressures < 120 and diastolic blood pressures < 80. The hypertensive group on the other hand had systolic blood pressures <140 and diastolic blood pressures < 90. The black subjects were studied at the Medical College of Wisconsin in Milwaukee United States and the second group was French Canadian whites who studied at Chicoutimi Hospital in Stguenay-Lac St. Jean Region of Canada. The total sample size included 220 normotensive individuals and 293 hypertensive individuals between the ages of 18 and55. The data collection took place over two days and required some inpatient evaluation. At this time, they were placed on a weight maintaining diet with a total sodium intake of 150 mEq of sodium and 80 mEq of potassium.

Patients who took blood pressure medications were required to stop their medications one week prior to the study.

Day One of the study, blood pressure was measured every 30 minutes during the day and every 60 minutes at night. Fasting plasma renin activity (PRA) and aldosterone were measured in subjects after been supine for 60 minutes and then repeated after standing quietly for 10 minutes. Plasma electrolytes were also measured and a 24-hour UA was collected to measure sodium, potassium, cyclic guanine monophosphate (cGMP). Overnight fasting plasma atrial naiuretic factor (ANF) and arginine vasopressin (AVP) levels were drawn from the participants. AVP was collected again after a fluid challenge. These studies were all measured in the laboratories at the Medical College of Wisconsin.

Data analysis for this study was done using SAS software version 8 to perform multiple linear analysis that evaluated the independent relationship of aldosterone and ANF with blood pressure after adjusting for age, gender, body mass index (BMI), PRA and urine sodium excretion. Each analysis used a 2-tailed significance level of $p<0.05$. Results from this study revealed that patients with the diagnosis of hypertension were older $p<0.001$ and had higher BMI level $P< 0.0003$. There was statistically significantly lower potassium in the hypertensive subjects than the normotensive subjects $p<0.01$. The plasma aldosterone levels also proved to be statically significantly higher in the hypertensive group $p<0.0001$ and the renin to aldosterone ratio significantly higher at $p<0.0001$. Plasma ANF and urinary cGMP were also statistically significant with ANF p<0.0001 and cGMP $p=0.006$. The AVP concentrations were significantly lower after fluid load $p<0.0001$.

An analysis comparing the two groups was also undertaken in this study. The BMI, body fat and waist circumference in the black group was significantly higher both with $p<0.0001$.

Night time blood pressure was higher in blacks $p<0.02$ and they also had lower PRA $p</= 0.0005$, higher aldosterone/renin ratio $p<0.0001$ and lower potassium excretion $p<0.0001$. Urine sodium excretion was higher in the black sample but was not statistically significant after accounting for BMI $p<0.07$. In the French, Canadian sample higher BMI and waist circumference was significantly correlated with a higher blood pressure $p<0.0005$ or less this was not true for the black sample. In blacks, both daytime systolic and diastolic blood pressures were positively correlated with high supine and standing plasma aldosterone levels and aldosterone/renin ratio both with $p<0.0005$; this was also true for nighttime even after adjusting for age, gender, BMI, PRA and 24-hour sodium excretion $p<0.004$.

This study indicated that hyperaldosteronism plays a strong role in the development and prevalence of hypertension in blacks. These results show the benefit of aldosterone blocker in the treatment of hypertension among persons of this ethnic origin. The authors advocate for future studies to be conducted so that approaches that evaluate the presence of hyperaldosteronism can be undertaken and therefore identification of at- risk individuals made evident.

Bidulesc, Francis, Ferguson, Bennett, Hennis, Wilks, Harris, Macleish, and Sullivan (2015), conducted a systematic review evaluating the literature surrounding hypertension in the Caribbean population. The prevalence of hypertension is disproportionately higher in the Afro-Caribbean than it is in most other populations; the aim of this study was to conduct a thorough evaluation of the literature to identify the cause for the significant disparities in this population. The researchers conducted a complete search using search engines such as, Ovid Medline, CENTRAL via Cochrane library, LILACS, SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH and ProQuest. An initial 455 studies were obtained; however; after extrapolating inclusion and exclusion criteria only 21 studies met this criterion and was included in the final analysis.

Most the studies identified for analysis were conducted in the United Kingdom. The data was arranged in a table format that classified the studies based on geographic location, study design, publication year, and outcome measures to assess the disease entity and disparity indicators. The researchers conducted a thematic synthesis of the data.

This study concluded that the rate of hypertension among Afro-Caribbean blacks was much higher than that of Caucasians, South Asians and some African blacks. The literature indicated similar prevalence of hypertension among sexes, with increased prevalence noted with increasing age. Social structure attributed to this disease prevalence with noted increase instances of disease among persons of lower- socioeconomic status. The overall significant findings of this study points to ethnicity, geographic location as primary contributors of hypertension prevalence, age sex and ethnicity correlating with hypertension complications and sex ethnicity and geographical location contributes to mortality in the Afro-Caribbean population. The main factors identified in this study are chronic stress, discrimination, lack of control and behavioral factors.

Although this review did provide some insight to healthcare disparities in this population, the researchers note that the literature surrounding this phenomenon is significantly limited. Most of the studies reviewed were conducted in the United Kingdom, with very little done in the Caribbean itself. The main contributing risk factors for hypertension were not addressed in the literature surrounding hypertension in the Caribbean. This study identifies that there are significant gaps in the literature as it relates to hypertension and the constituents of its prevalence in the Caribbean.

The literature surrounding hypertension in blacks indicates that there are strong components of both physiological and non-physiological attributes of HTN in blacks of African

origin. The study by Ogedegbe, Mancuso and Allergrante, (2004) supported the notion that African-Americans have non-physiological factors that affect their adherence to hypertensive regimens. Although the study indicated 35% of individuals had no non-biomedical beliefs in regards to their hypertension, the overwhelming 65% of this study's population that indicated some non-biomedical beliefs that contributed significantly to the factors of non-adherent behavior. The study by Connell, Mckevitt and Wolfe (2005) indicates that black Caribbean persons also have non-biomedical beliefs that directly affect the way hypertension is managed in this population. These non-biomedical beliefs are primary contributing factors that impair adherence, and continue to increase the amount of morbidity and mortality that is currently associated hypertension among persons of this ethnic group.

The biomedical components that fuel the prevalence of hypertension in black persons of African descent have received a lot of attention. Keith (1982) indicated that there is low incidence of renal artery stenosis in African-Americans, discounting this a primary factor for this disease prevalence among this group. Grim et al. (2005) however in their study concluded that blacks have high Aldosterone and Aldosterone/renin ratio accounting for increased sodium and water retention in this population and increasing overall blood pressure levels. The Larsen, et al. study also found that Blacks had more incidence of masked hypertension; a physiologic component that predisposes them to more incidences of this disease and more end organ damage as a result.

The Bidulesc. et al (2015) study indicates that the prevalence of hypertension in this population is staggering, however the literature that attempts to explain the causality is significantly lacking. This study indicates the need for further studies examining various Afro-Caribbean cultures and their social, cultural and economic structure that contributes to this

disease prevalence. The United States Virgin Islands is an America territory that is located in the Caribbean Sea. Its population is comprised of persons from most of the other Caribbean Islands. The social constituents of the people living there are culturally-diverse, but ethnically similar as they are predominantly populated Black persons from African descent. The biomedical factors that increase the incidence of hypertension in this population are likely the same that affect other Black cultural groups who are of African descent. The non-biomedical factors that promote health disparities however may vary tremendously and because of the uniqueness of this population's make-up should be thoroughly explored. This study will attempt to explore the non-biomedical characteristics of the United States Virgin Islander that may contribute to the prevalence of hypertension among this group.

Adherence

Adherence to medical therapies is an integral component of care that is necessary to establish desired therapeutic patient outcomes. Most chronic disease treatment regimens today are comprised of a complex integration between taking medications, following a specified dietary regimen, following an exercise regimen and attending follow-up visits with designated healthcare providers. Successful therapy mandates a follow through of all the above-mentioned components, making adherence one of the most pertinent aspects to achieve optimal health outcomes. Non-adherent behaviors among persons with chronic illnesses such as hypertension, diabetes and hyperlipidemia have caused tremendous deleterious effects among patients with these ailments. There are several studies that investigate the phenomenon of adherence and how it impacts the lives of individuals living with these diseases and have indicated significant deleterious effects as a direct result of this behavior.

The literature indicates a direct association between higher rates of morbidity and mortality and non-adherence to prescribed therapeutic regimens. Egede, Lynch, Gebregziabher, Hunt, Echols, Gilbert, and Mauldin (2013) conducted a longitudinal study form 2002-2006 with a sample size of 629,563. This study evaluated the effects of non-adherence on mortality by race and ethnicity among veterans with DM. The sample was obtained through linking various patient and administrative files from the Veteran's Health Administration, national care and pharmacy management database benefits. These databases were used to assess diagnoses, prescription fills and refills within one month. The final sample consisted of 629,563 veterans 72% Non-Hispanic whites, 13% Non-Hispanic Blacks, 5.3% Hispanics and 9.4% of individuals classified as other. Data was collected through evaluation of the previously mentioned databases, using detailed codes and set criteria to evaluate diagnosis of the disease prescriptions filled over previously specified month period. The main outcome measure of the study was time to death. The primary covariate was mean medication progression ratio, which was factored based on the number of days medication was supplied versus the number of days in a specified time period. The analysis was done using chi-square testing to evaluate the categorical variables and a T-Test was used to evaluate the continuous variables. Cox regression was used to demonstrate the association between death and medication possession ratio. The analysis showed a 95% confidence interval between medication progression ratio and mortality stratified by race and ethnicity. Adjustments for covariates were made for hazard ratio for subjects with lowest medication progression quintile (<49.3%) versus that of the highest medication progression ratio (>94.1%) was 12.21 (95% CI 11.89, 12.55) for Non-Hispanic Whites, 10.01 (95 % CI 9.18, 10.91) for Non-Hispanic Blacks, 12.65 (95% CI 11.10, 14.43) for Hispanic, and 10.41 (95% CI 9.06, 11.96) for other race groups. Hazard ratio at the second lowest quintile relative to the highest quintile, decreased to

7.75, 5.11, 7.09 and 5.92 for Non-Hispanic Whites, Non-Hispanic Blacks, Hispanic and others. In contrast to the second highest quintile (83.8<medication progression ratio<94.2%), the hazard ratio were almost equal to one showing no association between medication progression ratio and mortality. The findings from this study indicated an 8-fold increase in mortality among the patients with low medication adherence practices, indicating a definite correlation between medication non-adherence and higher mortality in the study population. The authors did not make recommendations for future studies with this phenomenon, but identified the strengths of this study as the sample type, size and the length of study and the follow up associated with it. Limitations identified were the reliance on the medication progression ratio, which currently was not concluded as a valid measure for insulin needs.

A study by Bailey, Wan, Tang, Ghani and Cushman (2010), also evaluated the association between medication adherence and disease risk and adherence and mortality. The purpose of this study was to evaluate if adherence to antihypertensive, medication ambulatory visits and distinct type of antihypertensive medication were associated with decreased incidence of stroke and death among persons with the diagnosis of hypertension. The researchers hypothesized that all the above-mentioned variables are avid precursors to complications of stroke and ultimately death among hypertensive individuals. The researchers used a retrospective cohort quantitative study design. They evaluated Medicaid patients in the state of Tennessee retrospectively from 1994-2000 *n*=49,479. All enrollees were assigned a primary-care provider (PCP), and were given pharmacy benefits with no co-pays. Patients were followed through electronic medical programs to evaluate total healthcare utilization. The analysis used cox regression modeling to determine bivariate and multivariate association with time to death or

stroke. SAS software was used to calculate hazards ratio and confidence intervals significance was inferred for variables with $p < 0.05$.

The results showed that of the 49,479 individuals, 60.6% were deemed non-adherent at baseline. Of the subjects enrolled in the study, 619 experienced a stroke and 2,051 died. Increase in baseline ambulatory visits showed decreased hazard of death [HR 0.99; CI 0.98]. Medication refill adherence was found to significantly protect patients from both strokes and death [HR 0.91; CI 0.86-0.97]. Adherence to follow-up visits showed to significantly decrease both stroke [HR 0.92; CI 0.87-0.96] and death [HR .93; CI 0.90-0.096]. Exposure to wide variety of antihypertensive medications was associated with 31% hazard of stroke [CI 1.21-1.42] and 15% increased hazard for death. However, exposure to beta-blockers, calcium channel blockers, angiotensin converting enzymes and angiotensin receptor blocks were associated with 3-4% decreased hazard of death. Thiazide diuretics exposure was associated with 5% decrease hazard of death [CI 0.92-0.98]. The Kaplan-Meter survival curve using an 80% cut off criteria was used to determine five-year survival with hypertensive medication adherence, follow-up and antihypertensive exposure. The adjusted Kaplan-Meter survival curves showed statistically significance $p<0.0001$ when there was baseline refill adherence of 80% or greater, and a statically significant $p<-0001$ of death outcome associated with less than 80% refill adherence. The authors recommended that further studies surrounding this phenomenon be conducted to identify the number and types of follow-up visits necessary to maintain optimal blood pressure control and prevent adverse effects. Another suggestion is made for future studies to be conducted that will evaluate the most effective technique for refining adherence and facilitating ideal blood pressure control in an outpatient ambulatory type of environment.

One of the primary factors linked to uncontrolled HTN in the literature is non-adherence to therapeutic regimens. Kettani, Dragomir, Cote, Roy, Berard, Blais, Lalonde, Moreau, and Perreault (2009) in their quantitative retrospective population-based study evaluated the impact of better medication adherence in hypertension and primary prevention of cerebrovascular disease in a sample of 83,267 Canadian patients with HTN recreated from the *Régie de l’assurance maladie* du Québec databases. Researchers used a case controlled design to study the occurrence of cerebrovascular disease in the selected population. Medication progression ratioes were used to calculate adherence to antihypertensive drugs. Descriptive statistics used conditional logistic regression, to show the relationship between antihypertensive medication adherence and the diagnosis of cerebrovascular disease.

Multivariate analysis was conducted and the results indicated that adherence to antihypertensive medication regimen of equal to, or greater than 80% was associated with a decreased risk of cerebrovascular disease (RR, 078; 95% CI, 0,70 to 0.87) compared with lower adherence after at least one year of exposure. Study results revealed an associated 22% decrease in the risk of cardiovascular events in patients who were adherent with 80% or greater of their antihypertensive medication regimen. Recommendations for educational interventions involving healthcare professionals and patients were made in order to deter cerebrovascular effects of non-adherence.

Another study that shows improved risk reduction of end organ damage with increased adherence to antihypertensive medications is the study by Roy, White-Guay, Doais, Dragomir, Lessard and Perreault (2013). These researchers utilized a retrospective population based study with a sample of 185,476 patients identified from the databases of the *Régie de l’assurance maladie du Québec* (RAMQ) and Med-Echo, both of these manage public health care insurance

programs in Quebec, Canada. This study evaluated the rates of adherence to antihypertensive medication and its impact on end stage renal disease risk in this group. Descriptive statistical analyses with *T* test and Chi square was used to evaluate the continuous and categorical variables and Cox regression was conducted to evaluate the drug the association between drug exposure and ESRD. The mean adherence to antihypertensive agents was 83.9% (+/_ 27.1%). The adjusted hazard ratio of end stage renal disease was considerably lower in the group that was associated with high adherence compared to the group associated with low adherence (HR: 0.67; 0.53-0.83). This study also revealed that high adherence to antihypertensive medication (adherence ratio of equal to or greater than 80%) was related to reduced rates of end stage renal disease. Recommendations for incorporating strategies for assessing medical adherence and incorporating measures to improve medication in long-term therapies was regarded as utmost importance in this study to facilitate optimal treatment outcomes.

There are many factors identified in the literature as barriers to adherence in the hypertensive population in particular. These factors have been investigated in various groups and have been identified as relevant elements that fuel the prevalence of this disease. One factor identified by many researchers as a hypertensive regimen adherence deterrent is the lack of education about the disease process, its impact on vital organs, and the role of therapeutic treatment regimens in curtailing these effects. Karakurt and Kasiki (2012) investigated adherence practices in a population from Erzincan, in Eastern Turkey. This study utilized a descriptive method, which used chi-square testing to evaluate adherence with medications and the dynamics that precludes the use of antihypertensive medications in a population sample of 750 hypertensive people from this constituency. The results of this study indicated that 94.4% of these individuals knew that they should be following a special antihypertensive diet; however,

only 47.3% did in fact adhere to this diet. A total of 59.7% of this population did not use their antihypertensive medications, as they should with 49% of the population pointing to forgetfulness, loneliness and negligence as primary reasons for this non-adherent behavior. High cost of medications was attributed to hypertensive medication non-adherence in 26.5% of the population and old age and/or inactivity accounted for 16.3% of this non-adherent behavior. This study indicated a statistically significant ($p< 0.01$) difference among adherence behaviors exhibited by elderly population vs. younger population. There was also a statistically significant difference ($p < 0.001$) in adherence related practices in those individuals who were cognizant of the detrimental health effects of this disease process versus those who did not. The results of this study indicated that younger people with hypertension should be considered high-risk for non-adherence and health care providers should have special precautions in place to deter this behavior. The results of this study suggest that stakeholders and governmental agencies must put forth a greater effort to educate individuals regarding hypertension and the detrimental effects of non-adherence.

Sansbury, Dasgupta, Guthrie and Ward (2014) conducted a quantitative inquiry using the health belief model and path analysis to investigate if an individual's emphasis on future versus present influence their overall concept of health and therefore directly or indirectly influence adherence behaviors among persons with HTN and diabetes. This study was conducted in Silver Spring, Maryland; Hagerstown, Maryland; and Martinsburg, West Virginia. A sample of 178 multicultural and educationally-diverse subjects was surveyed. The researchers used the health belief model as the theoretical framework for this study and used a spearman correlation to test between participant's time perspective and beliefs about health. The results of this study showed a significant correlation between time perspective and better medication adherence with a *p*

value of <0.0001. This study indicated that individuals who were futuristic and understood the future complications associated with the disease were more likely to be adherent than those who lived in the moment. Persons who believed in predetermined faith also showed an inclination to practice non-adherent behaviors. The results of this study also indicated that individuals that were more futuristic and therefore more likely to be adherent were younger and more well educated. The individuals who proved to have a here and now or predestined outlook tended to be older and less well educated.

Adherence is a significant aspect of medical management that is often over looked. The literature in this section indicates that there is a direct correlation between adherence practices and optimal patient outcomes. Studies by Egede et al. (2013), and Bailey et al. (2010) both correlated the incidence of morbidity and mortality as it relates to adherence to medical therapies in chronic diseases. Both studies indicated high likelihood for both occurrences when adherence to medical therapy is not maintained. Kettani, et al. (2009) indicated a decreased risk for development of cardiovascular disease in persons with hypertension and study by Roy et al. (2013 showed a high incidence of end stage renal disease in patients who were non-adherent to hypertensive medication therapy. The studies that evaluate the factors that contribute to non-adherence are also abundant and all indicate that these factors in the hypertensive patient have many variants. The Karakurt and Kasiki (2012) study indicated fewer adherence practices among younger persons. Sansbury, Dasgupta, Guthire and Ward’s study indicated that personal beliefs about illness compelled adherence behavior, and that these personal characteristics are likely the change factor that causing these results to differ among these populations. Both the Karakurt and Kashi studies indicated that education regarding disease and treatment were pertinent factors that enhanced adherence.

Medical Mistrust and Adherence

The residues of slavery, segregation and the civil rights abuse that dates back to the inception of the Americas all the way through to the late 20th century are significant confounding factors that reverberate among African-American communities. These historic occurrences along with instances such as the Tuskegee syphilis study conducted by the US Department of Health and the Department of Energy's Cincinnati study, both of which unethically used poor, impoverished African-American subjects in the name of science, fostered a significant degree of medical mistrust among persons of color. African-Americans over the years have expressed decreased faith in the healthcare system, which has led to decreased willingness to seek healthcare and increased disease prevalence among this group. African-Americans are statistically more prone to developing hypertension earlier in life and to develop much more deleterious effects from this disease.

Casagrande, Gary, LaVeist, Gaskin, and Cooper (2007), in a quantitative cross-sectional study assessed healthcare disparities in integrated communities. The study was conducted in Baltimore, Maryland, which is one of the most integrated communities in the United States as far as African-Americans and Whites are concerned. Baltimore is said to have an equal number of African-Americans and White Americans. The sample for this study consisted of 1,408 participants, of which 40.7% was White and 59.3% was African-American. Data collection was done through face-to-face interviews and responses analyzed. Although there was no statistical difference between perceived discrimination in this study, and delay in medical treatment among study groups $p = .171$, African-Americans reported higher likelihood of medical mistrust with approximately 20% in the upper quartile reporting this behavior compared to only 15.9% of whites. These values show clinical significance with a p value of $< .001$ and definitely indicates

that these factors do impact care to some degree, 53% of the population reported some delay in and poor adherence due to perceived discrimination. This study also indicated a correlation between medical mistrust and whites and blacks of similar socioeconomic groups. Recommendations for future longitudinal studies to evaluate the association of medical mistrust among varied populations were made. Recommendations were also made for qualitative studies to provide precise analysis of individuals who fail to seek healthcare due to perceived discrimination.

Elder, Romamonijarivelo, Whltshire, Piper, Horn, Gilbert, Hullett and Allison (2012) in their quantitative study highlight medical mistrust and its impact on hypertensive medication adherence. The goal of this study was to investigate the relationship between trust in the medical system and medication adherence and hypertension control among southern African-American men. This study was conducted in Birmingham, Alabama, with a total of 993 participants. 820 of these were African-Americans, with 235 being African-American men and 585 African-American women. The rest of the sample consisted of 173 white Americans; of these, 111 were women and 62 were men. Data was obtained through the use of a computer program run by trained individuals to conduct face-to-face interviews while abstracting cardiovascular risk factors. Data analyses were done using StataCorp LP, College Station, TX (STATA) version 10.0 and frequency distributions were used to measure the controlled variables. The Hall Trust Scale was used to measure trust and the Ogedegbe Self-Efficacy Scale was used to measure self-efficacy and regression analyses was used to measure the variations in adherence and HTN control among African-American men. Statistical significance was measured for P value < .05. Results of this study indicated that participants with greater trust in the healthcare system were more likely to be adherent to medical therapy than those who had less trust in the healthcare

system. These results were significant and through analysis with a P value of .027, indicated that trust in the healthcare system does gain better adherence among hypertensive individuals; however, it did not lead to better blood pressure control p=.105. Participants with higher self-efficacy scores also had higher adherence with p<=.002, which also led to better BP control with p = .048. The Elder et al. 2012 study indicated that although higher self-efficacy and greater trust in the medical system lead to improved adherence rate, only higher self-efficacy was a determining factor in determining better blood pressure control. These factors indicate a high correlation with adherence, overall blood pressure management and social factors in African-American men. Recommendations were made in this study for implementation of healthcare initiatives aimed at developing trust among African- American patients. This measure is viewed as imperative initiative that must be considered to alleviate the healthcare burden on non-adherence among this population.

The study by Callwood, Campbell, Gary and Radelet (2012) is an important qualitative study that investigates the challenges and perceptions of health and healthcare of citizens living in the United States Virgin Islands. In this study, the researchers obtained data from six focus groups. These groups were comprised of individuals from the three largest islands comprising the United States Virgin Islands. In this study, all participants identified health as a multidimensional paradigm with culture serving as an important determinant. Participants expressed the opinion that cultural incompetence of healthcare providers was a direct hindrance of good medical care. They expressed less desire to seek care from these individuals for fear of their lack of understanding them and their practices as Virgin Islanders. The study participants also identified inadequate financial resources as a roadblock to good care and admitted that thus they would use home medical preparations prior to seeking care from professional medical

practitioners. This study population admitted to the using alternative therapies such as herbs, "bush tea" (tea made from the leaves of local plants) and alternative medical practitioners without knowledge of professional healthcare providers. Although this study does provide a host of useful information regarding health care perceptions of this population, it does not address the issue of adherence specifically; the information presented here does indicate that there are some non-adherent behaviors among this population that can directly impact care. This study also infers some aspects of medical mistrust among persons of this population that can ultimately foster non-adherent behaviors. The researchers in this study did not make overt recommendations for future studies, but indicated that they were conducting future studies that will evaluate culturally-based practices and how these can be implemented into current care to improve healthcare delivery on the Islands.

This literature highlights non-adherence as a direct precursor for disease prevalence and deleterious effects associated with this prevalence. The studies sited in this section show a strong propensity for medical mistrust among African-Americans. Casagrande, Gary, LaVeist, Gaskin, and Cooper (2007) showed a statically significant difference between the reported medical mistrust the African-Americans and the white American participants in the study. Elder, et al. (2012) in their study showed a statistically significant correlation among between trust in the healthcare system and better adherence practices. This study indicated that self-efficacy was more significant in determining better BP control, however the fact that medical mistrust was linked to decreased adherence, which has been linked to increased disease prevalence and overall poor disease outcome. This indicates that medical mistrust may be addressed to effectively combat the effects of non-adherence. In the Callwood, Campbell, Gary and Radelet (2012) the participants indicated lack of faith in the healthcare provider as a significant factor in off-putting

of medical care. Although this study did not investigate adherence *per se*, the concepts of care identified by the participants indicate that this may be an issue and warrants a thorough investigation. This study examined all factors that may attribute to the prevalence of hypertension in the population from the United States Virgin Islands medical mistrust, which was identified in the Callwood, Campbell, Gary and Radelet (2012) study.

Culture and Adherence

The United States Virgin Islander is an American citizen with a strong Caribbean cultural interplay, which influences attitudes and approach to healthcare and adherence. The many thumbprints of cultural influences create quite a diverse and culturally-perplexed group that may ultimately view health and wellness in aunique way. To group this population under a single subset of their makeup ultimately foregoes an intricate aspect of their psyche that may ultimately explain aspects of their behavior. Social and medical research involving this population mandates a look at the cultural influences that may explain certain behaviors. There are many studies that investigate the cultural influences of medication adherence in various populations; however, to this researcher’s knowledge, there are currently no studies that investigate the influences of culture on adherence to therapeutic medical management of hypertension or any other chronic illnesses in the population from the United States Virgin Islands. It is imperative for this researcher to evaluate how culture ultimately influences adherence in other populations to evaluate if these trends may exist in the population being studied.

Bassett-Clarke, Kras and Bajorek (2011) conducted a qualitative study using four focus groups, each with 4-6 participants to investigate the ethnic implications of adherence in a population from New Zealand. This study evaluated ethnic differences of medication taking in the older adult population living in New Zealand. The study population consisted of adult New

Zealand natives (Maori), the New Zealand European and the Pacific and Asian adults living in New Zealand. There were three themes that emerged from this study. The first was “conception of a medicine”. Each individual group had their own concept of what medicines were how they were used. The second theme was “self-management of medication”. The overall self-management among the groups were perceived as good; however, the ways in which the groups each chose to self-manage differed significantly, with the Maori, Asians and Pacific persons most concerned about toxic effects and therefore more likely to engage in non-adherence practices. The third and final theme was “seeking further medicines information”. All participants expressed the desire for more information; however, this was much more overt in the New Zealand-born Europeans than in the other ethnic minorities. The study findings indicated that although these various ethnic groups all lived in New Zealand, their views of health and healthcare management differed between groups. At the same time, views were similar within the group sets, indicating a strong association between cultural ties and medication adherence. Recommendations from this study to improve medication adherence included improved provider communication. Researchers suggested that more widely-distributed information given through informed community summits, mailed and electronic distribution facilitate improved awareness among patient populations.

There is a significant amount of literature that evaluates the effects of culture on medication adherence within Asian cultures. This abundance of literature likely stems from the known Asian beliefs about the disruption of the ying and the yang that illnesses are thought to manifest. Studies by Li, Kuo, Hwang, and Hsu, (2012), Lee, G. K. Y., Wang, Liu, Cheung, Morisky, & Wong (2013), Li, Kuo, Hwang, Hsu, (2012), Wu, Yang, Yao, Lin, Wu, and Chang, (2010) and Yue, Bin, Weilin, and Aifang (2015) are just a few of the studies that evaluate how

culture affects adherence in the Asian population. The current literature surrounding the Chinese population and health suggests that the Chinese view health as a condition free of symptoms. This view has served in much of the literature as a reason for this population to have some adherence issues when it comes to management of chronic illnesses such as hypertension. Hsu, Mao and Wey (2010) conducted a quantitative study using a descriptive cross- sectional convenience sample survey design to evaluate adherence practices among elderly Chinese-Americans. In this study, the researchers evaluated the level of antihypertensive adherence among this population, specific demographics that could contribute and if medication adherence was dependent on a patient's perceived needs. The Johnson's Medication Adherence Model (MAM) was the theoretical framework used to guide this study and the Hill-Bone Compliance Scale was used to evaluate patients self-reported compliance levels. Data analysis was done using the SPSS version 14.0 software and the mean scores and percentages from the Hill-Bone Compliance Score were calculated to determine the level of compliance. The scale for the Hill-Bone Compliance Scale ranged from 9-22 with a mean of 10.3 and standard deviation of 2.53. T-tests were used to compare the differences between gender (male vs. female), level of education (college educated vs. non-college educated) and years of US residency/Citizenship (>10 years vs. < 10 years). The sample size for this study was 94 with a mean age of 75 years.

The Hill-Bone's Compliance Score was 9, which signified high compliance among this group. Sixty-three percent responded that they had never forgotten to take their blood pressure pill, 69% reported never missing a pill, 78% never deliberately did not taken their pills and 82% reported never missed taking a pill. Overall 52% of elderly Chinese-Americans were compliant with their antihypertensive medications; 36% reported that medications were unsafe, 21% reported that they decided not to take their medications due to adverse effects, 27% reported

language barrier prohibited adequate understanding of medication and disease process and 30% reported having a cultural variant that prohibited adequate prescription adherence. This study highly recommended developing culturally effective assessment and approaches to foster improvement of medication adherence

Throughout the literature there is a paucity of studies that examine medical adherence among cultural groups from the Caribbean Islands. Researchers Chambers, Raine, Ruhman, Hagley, Ceulaer and Isenberg (2008) conducted a qualitative study at the University Hospital of the West Indies. They had a total sample of 92 participants; 75 who completed a questionnaire and 17 who conducted semi-structured interviews. Data for this study was collected over a three-month period. The researchers used an analytic induction process of examining the cases, and developed hypotheses by testing and refining them by deviant case analysis. Results from the questionnaires revealed that 60 of the participants attended their appointments regularly, 15 had missed at least 50%. Only 56% of the questionnaire participants indicated that they took their medications as prescribed 85% of the time, indicating poor adherence, compared to the adherence rate postulated by other researchers studying chronic diseases in Jamaican populations. Results from the 17 interviews produced the following six major themes: cost constraints, fear of side-effects, use of herbal remedies, religious beliefs, perceived health benefits and respect for physicians. Cost constraints and fear of side-effects were found to be the primary reasons for non-adherence in this population.

Studies that explored adherence in the hypertensive patient from the Caribbean are scarce. One seminal qualitative study done by Morgan and Watkin (1988), examined the difference in medication-taking practices among white persons living in England versus that of persons from the West Indies living in England. The sample consisted of 60 individuals, 30 of

which represented the white English population and the other 30 represented the West Indian population. The data collection was conducted through semi-structured interviewing processes and analyzed for themes. Results indicated that between both groups, stress was a definite factor that they felt contributed to their prevalence of high blood pressure. Twenty-four of the 30 West Indian participants had no identifiable cause of hypertension, versus 17/30 of the white participants. Twenty-six out of 30 of the white participants took their medications as directed, as opposed to 12/30 of the West Indian population. Fear of addiction and long-term harmful effects of medications were two reasons given by the West Indian population for non-adherence. The West Indian populations also admitted to using herbal remedies in conjunction with, or as an alternative to, their prescribed antihypertensive medications without the knowledge of their healthcare provider. The West Indian participants referred to the herbal remedies as safer and less likely of causing adverse effects.

The factors surrounding adherence are immense. The studies in this section demonstrate that culture and cultural practices can be a definite catalyst for non-adherence among various cultural groups. Although they featured different cultural groups, all the studies in this section indicated the presence of some cultural factors that influence the way care is viewed and the participants' responses to various treatment regimens based on said factors. Bassett-Clarke, Kras and Bajorek (2011) in their study, indicated that although all the participants lived in New Zeeland, they perceived care differently based on ethnic origin. The Morgan and Watkin (2008) study also indicated strong care convictions among the West Indian population that impacted their level of adherence to their medication regimens. The Chambers, Raine, Ruhman, Hagley, Ceulaer and Isenberg (2008) study showed that cultural beliefs about medications and physicians were directly associated with adherence behavior. This study also indicated other variables, such

as financial constraints as deterrents to adequate adherence, and although these factors caused a significant impact, the cultural variable seemed to impact significantly as well. This study will explore the US Virgin Islander and will investigate whether cultural factors within this group can negatively or positively influence adherent behaviors as it pertains to the therapeutic medical management of hypertension.

There are many factors identified by the literature as confounding factors attributing to adherence behavior in the hypertensive individual. This literature review clearly indicates knowledge, self-efficacy, health care illiteracy, fear, and other environmental and social factors are key deterrents of adherence. It indicates a significant correlation between lack of adherence and the prevalence of hypertension and ascertains that this prevalence leads to significant morbidity and mortality. The behaviors that lead to non-adherence are numerous and are identified in this literature review as both psychological, and environmental. Evaluating these factors in patients could deter the tragic effects associated with the lack of control. There are currently no studies in the literature that looks at adherence practices as it pertains to therapeutic hypertensive medical adherence in the US Virgin Islander. Examination of all relative factors that may preclude therapeutic medical adherence and treatments in this population are key factors in achieving successful overall management. The current paucity in the literature as it exists is a detrimental barrier and therefore contributes significantly to increase morbidity and mortality among these people. This study identified the critical factors that contribute to adherence in the hypertensive population from the United States Virgin Islands.

Experiential Context

The experiential context seeks to give a description of the author's connection to the topic. This section is a very important part of a study because it serves to connect the author with

the study. An author who has some connection to the study will ultimately show passion when approaching the subject matter. Epoche is another term used for bracketing in qualitative research these terms allow for the researcher to put aside whatever experiences he/she has with the phenomenon been investigated so that the data produced will be free of bias that could very well be imposed by the researcher's views (Cresswell, 2013). The experiential content allows for the researcher to voice his/her experiences with the subject so that Bracketing can take place and the study can they produce untainted data.

I am a native of St. Croix US Virgin Islands, and was exposed to many of the herbal remedies my family used to treat certain common ailments while growing up. Hypertension is a rather common occurrence among this population, and as a child I often heard my mother saying that she was going to "boil some bush for the pressure" (making of tea with leaves to treat her high blood pressure). This is a very common occurrence among various members of my family who suffer from high blood pressure. I have heard various people loosely use the term "pressure" to refer to the adverse effects of stress due to hectic conditions. Most recently, I lost my aunt at the age of 56 to a massive hemorrhagic stroke. When she got to the hospital her systolic blood pressure was over 240. My aunt was known to have used various teas and other herbal remedies to treat her blood pressure along with her regimen prescribed to her by her primary-care physician. She did not judiciously check her blood pressure and had not checked it in a long time. She had often mentioned to me that her physician had told her that her blood pressure was very high when she went for her follow up visits but she was never able to explain to me what was done about this. In the advent of her death, I cannot help but feel that something instrumental was missing from her care that could have averted such a horrific event for my family. While I was at home in St. Croix for the funeral, I spoke with many neighbors and

friends who informed me that they too had high blood pressure and that they did not take their medicines everyday--some because of the use of herbal remedies others for reasons such as accessibility of medications, fear of the adverse effects that taking pharmaceutical medications had on the body and lack of trust in healthcare system on the Islands. They all echoed that they did not have adequate conception of the serious deleterious effects that results from untreated high blood pressure.

At the time of my aunt's funeral I noted that there was a significant problem of non-adherence to antihypertensive therapies and there is also a tremendous lack of health literacy regarding this disease process that existed among several persons that I had spoken with. As a healthcare provider who specializes in the treatment of neurovascular diseases, this tremendously concerned me. In evaluating the literature, I noted that there was no literature that highlighted the adherence practices of hypertensive individuals in the United States Virgin Islands. This study highlights several factors that contribute to adherence and non-adherence behaviors to antihypertensive therapeutic regimen among this population. Conducting this grounded theory study allowed me to generate a substantive theory related to this phenomenon and it perpetuates grounds to test the generated theory in future studies.

To approach this research objectively, the researcher must look past all perceived understanding and ideas about the phenomenon that my prior stated encounters and experiences has caused me to formulate. The researcher will approach this in my grounded theory study by using tools such as journaling and memoing. Journaling allows me to write down all personal opinions about data, as it is collected from my participants. This process permits me a portal to disgorge my opinions and ideas, which in turn lets acknowledge my potential biases and set them aside from the data collected. The separation of my biases from will therefore elucidate only the

views of my participants and consequently improve the overall credibility and dependability of this qualitative study. A Grounded Theory study also calls for memoing, this tool is used throughout the coding process to formulate and document ideas about emerging themes that will eventually lead to the formulation of a substantive theory that will explain the phenomenon in question (Strauss and Corbin, 1990).

Chapter Summary

This chapter examined the literature regarding the phenomenon understudy. The focal points in this chapter reviewed the historical context of hypertension and adherence. It also explored the presence of hypertension among blacks and the possible deterrents of adherence in this population. The chapter also featured adherence on a broad scale and the established deterrents in the literature. Some of the cultural aspects of adherence deterrence were also reviewed in this chapter. This chapter did not present any literature on the adherence practices of persons from the US Virgin Islands, as it established a significant paucity in the literature as it pertains to this phenomenon. This chapter also presented and explained the researcher's experiential context.

CHAPTER THREE

METHODS

The aim of this qualitative, grounded theory study is to explore the critical factors that influence adherence to hypertensive therapeutic regimen for the hypertensive patient from the United States Virgin Islands. Its overarching purpose is to develop a substantive theory that would lend substance to the body of knowledge regarding this phenomenon. There is currently a significant educational scarcity as it pertains to the understanding of the factors that may positively or negatively influence adherence to prescribed therapeutic hypertensive management for the individual with hypertension from this region. Data obtained through this study will contribute to the body knowledge needed to understand the intricacies of how this population views hypertension, the understanding of care needed to control this disease process and the factors that contribute to their deterrence or conformance to these prescribed regimens. This information will serve to inform nursing and all other aspects of the medical profession involved in caring for these individuals and will ultimately serve as a platform to improve healthcare outcomes for this population. Study sample, recruitment procedures, Ethical considerations and data collection procedures are also key elements that establishes sound empirical context of a study; these elements will also be examined thoroughly in this section.

Research Design

A researcher can choose to use either a qualitative or quantitative design of research inquiry to study an occurrence, but as Munhall (2012) describes in her publication, these approaches are not readily-interchangeable. Instead, they are rather polar opposites and it requires careful deliberation by the researcher to determine which approach fits the proposed inquiry best. The research question is the most accurate determinant of the best research

approach that will offer the most knowledge and insight into a phenomenon (Crotty, 1998). The occurrence studied here has never been evaluated, and therefore currently indicates a significant educational gap. To bridge this educational gap, this researcher has chosen three research questions. To effectively evaluate these proposed research questions, the selected research design must provide detailed explanations of the phenomenon. A qualitative type of inquiry is the most effective way for the researcher to capture the languages of the participants so that the information obtained is reflective of their voices and therefore their own truth. The qualitative method that would best investigate this social process is a grounded theory study. This method would generate a substantive theory that could be further tested and would likely be used in larger studies to gain as much knowledge as possible about the subject of therapeutic medical adherence in the hypertensive population from the United States Virgin Islands.

Grounded Theory

Grounded Theory is a Qualitative method of inquiry that looks at social processes. Barney Glaser and Anselm Strauss are the credited founders of this research approach; they introduced this method to the general public in1967 (Creswell, 2013). The role of the researcher in Grounded Theory is active rather than passive. This dynamic research process is the culmination of two distinct thought processes that merge to create a fundamentally sound research technique that allows a researcher to derive a theoretical perspective that is grounded in the data relayed by the research participant. Barney Glaser hails from the Columbia School of Sociology, where the dominant research design was in the quantitative realm. This offers a positivist objective reality that analyzes data with a deterministic, mechanic, and reductionist approach. Anselm Strauss, on the other hand, hails from the University of Chicago School of Sociology, where the predominant research approach fostered was a qualitative design. This

design offers a more intuitive, interpretive and holistic approach for data analysis. Grounded Theory embraces an abductive process which examines the derived facts and after detailed enquiry assures that all possible rationalization for this observed data is ascertained, after which a hypothesis is formed to corroborate or dispute these findings until the researcher arrives at the most plausible elucidation of the phenomenon (Charmaz, 2006).

The unification of the Glaser and Strauss approaches created a methodology that presented just enough objectivity and subjectivity to provide sound analysis of a phenomenon. The Grounded Theory method uses various levels of coding and sampling to provide more rigorous analysis of data, while allowing for the participants' voices to emanate throughout the derived analogy of the phenomenon. Later, Glaser and Strauss divided due to identified differences in how they both began to conceptualize the grounded theory method. The division of the two allowed for expanded concepts of the Grounded Theory methodology (Creswell, 2013). Anselm Strauss had pushed for a more systematic approach to data analysis, while Glaser maintained that a more open-ended approach was needed (Evans, 2013). This led to the separation of Glaser and Strauss and resulted in the eventual formation of other versions of the Grounded Theory method.

Glaser kept his version of the method, which is now referred to as the Classical Grounded Theory method. Glaser emphasizes that Grounded Theory is a concept. He states that the researcher should enter the study with no prior knowledge of the data and emphasizes that no literature review should be considered until the study has been completed. He believed that conducting a study in this manner would ensure that data obtained is not contaminated in anyway by pre-existing concepts surrounding the phenomenon (Evan, 2013). In 1998, Anselm Strauss teamed up with Juliet Corbin, and together they evolved their version of the Grounded Theory

method. The structure of the literature review is not as stringently-emphasized in the Strauss and Corbin model, or any of the other methods introduced later as it is with the Glaser's method. The primary differences emphasized by the various Grounded Theory methods are the various levels of coding introduced by each. Glaser's Grounded Theory method utilized substantive and theoretical coding methods of data analysis (Evans, 2013). Strauss and Corbin emphasized a more structural approach to coding, which incorporated a system of open coding, axial coding, and selective coding (Evan, 2013). This level of coding assures the basis of Strauss and Corbin's model, which stresses that Grounded Theory requires a constant interplay of induction and deduction to arrive at a sound theory that explains phenomenon. Kathy Charmaz (2006) is another social Sscientist who came up with her own version of the Grounded Theory method; her approach used a constructionist approach to research. Charmaz's approach stresses that reality consists of concepts that are generated and that different people generate different realities (Charmaz, 2006). Her method used open coding, theoretical coding and focused coding (Evans, 2013).

The Grounded Theory method introduced by Strauss and Corbin in 1998 is the approach that will be used in this study. This approach is composed of systematic analytic procedures to develop theories about the phenomenon being explored. Interviews are completed and then transcribed the researcher, then information is categorized and then constant comparison is used to create teams (Creswell, 2013). Next, the researcher starts coding the information using open coding. This coding technique groups information into broad categories (Creswell, 2013). Data analysis is a continuous process and occurs simultaneously with data collection. The use of constant comparative analysis and memoing yields small groups of categories that eventually merge into larger groups. After collecting a substantial amount of data and compiling larger

groups of categories, the researcher then begins seeing more defined categories. The process will then move into axial coding. Axial coding produces categories that are closely related to the core phenomenon (Creswell, 2013). The final and most refined aspect of the coding process is selective coding. In this process the researcher uses the categories and finite them into a story that fully details the phenomenon (Creswell, 2013). The picture below is a figurative representation of this researcher's interpretation of the Strauss and Corbin Grounded Theory methodological approach.

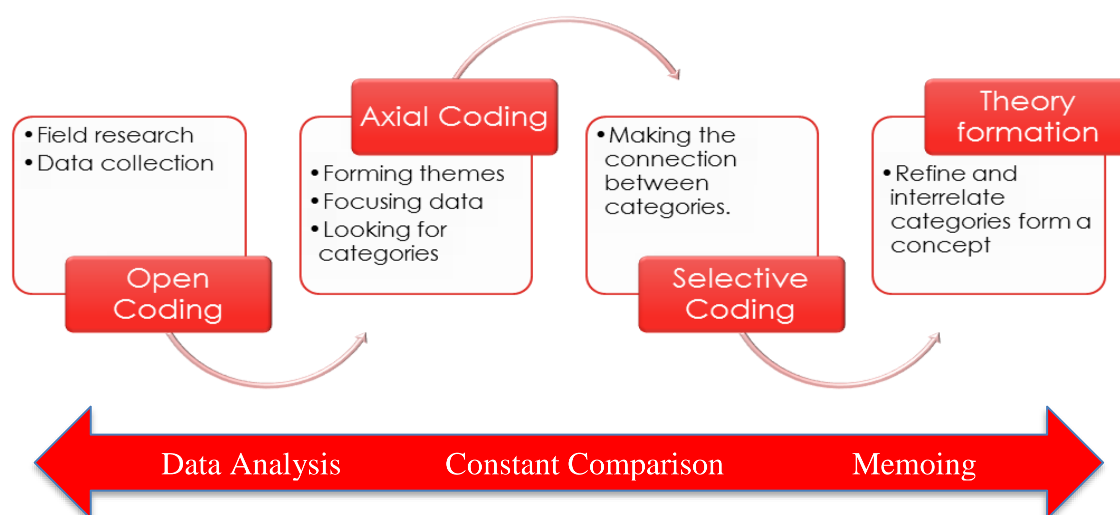

Figure 4: Adapted from Strauss and Corbin Grounded Theory Method (J Morton, 2016)

Sample and Setting

This grounded theory study utilized both purposive, snowball and theoretical sampling techniques. Initial sampling was purposeful and participants were selected based on preset inclusion and exclusion criteria proposed by the researcher. These participants had defining characteristics that the researcher believed renders constructive information that ideally represented the hypertensive population of the United States Virgin Islands. Purposive samples

allowed the researcher to engage in the open coding process, which helped to identifying initial concepts relevant for ongoing data analysis. This was engaged as data collection took place in the Grounded Theory process (Strauss and Corbin, 1998). Snowball sampling was also another sampling method used early in this study, as initial participants referred friends and family members fitting the researchers predetermined study criteria. The open coding process evolved from this method of sampling, as the researcher actively engaged in thematic analysis. Theoretical sampling was initiated after the researcher began to identify main categories and supporting data was delineated into subcategories attempting to establish conceptual relationships (Strauss and Corbin, 1998). Theoretical samplings are refined, methodical and continues with constant comparison until concepts are assimilated dimensionally and give rise to the substantive theory that offers valid explanations of the phenomenon (Strauss and Corbin, 1998). The sampling process in this Grounded Theory study was an essential component of the data analysis process moving the researcher from conceptual identification with purposive and snowball sampling to categorical relation and distinction with theoretical sampling to the final to theoretical emergence (Strauss and Corbin, 1998).

Sample size in Grounded Theory is variable and largely dependent on the number of participants required for the researcher to yield theoretical exhaustion and germinate a substantive theory that explains the phenomenon. Theoretical sampling requires that data collection continue until theoretical saturation is met (Munhall, 2012). Many researchers vary in the number of participants that they select. Munhall (2012) suggests that a sample size of 10-15 in a phenomenon that has a narrow domain and 40 participants in a study that has a broader domain is a workable sample and lends solid theoretical saturation. Solid theoretical sampling is necessary for the workability of the generated substantive theory. The sample for this study was

obtained from two of the two larger islands in the US Virgin Islands, St. Croix and St. Thomas. The sample size for this study is a cumulative count of n=21 individual participants for the 1st phase of the study and a total of n=4 participants for the second phase of the study. Of the total sum of individual participants in Phase 1 of the study, 12 participants were from the Island of St. Croix and nine were from the Island of St. Thomas. For the second phase of the study, the three participants were from the Island of St. Croix and one was from the Island of St. Thomas.

The criteria for the purposive sample attempted to define characteristics of the population that would best meet the overall research purpose. Initial sampling consisted of participants between the ages of 18 and 80 who were born in the USVI or acculturated (Living in the island for longer than 5 years), have a diagnosis of hypertension for one year or longer and were put on medications to control their blood pressure at some point by a healthcare provider. This sampling phase allowed for open coding so that various concepts could emerge from the data. Snowball sampling also allowed for more participants in this phase that again yield several concepts. Theoretical sampling then emerged with axial coding, which assimilated the arrived concepts into categories and subcategories based on identified relationships (Creswell, 2013). At this point, participants were chosen to verify identified concepts and offer insight for the basic categories. The final sampling phase was selective sampling; in this phase, selective coding took place. Participants were carefully selected with the intension to integrate categories to yield a substantive theory (Strauss and Cobin, 1998).

Theoretical saturation for this study was reached after the first 15 interviews; an additional six interviews were conducted to ensure that no new concepts would emerge. A focus group sample of four females between the ages of 50 and 80, who were all born in the USVI or living in the Virgin Islands longer than 20 years; with a diagnosis of hypertension for 20 years or

longer were interviewed. The selection of members for this group was carefully calculated and deliberately orchestrated to provide sound validation of the previously-arrived substantive theory. The researcher's aim in selecting this group of individuals was to assure that their level of expertise on the Virgin Islands culture and on hypertension management from the perspective of the United States Virgin Islander was adequate and could offer sound constructive insight into the studied phenomenon.

Access and Recruitment of the Sample

To gain access to potential participants, the researcher first obtained approval for the study from the Institutional Review Board (IRB) for Barry University. Once this approval was obtained, the researcher then sorted and gained approval for conducting this study from the IRB of the University of the United States Virgin Islands. To gain access to the population of the USVI, the researcher had to obtain approval to conduct the study from the University of the Virgin Islands IRB committee. The application process required the researcher to solicit a project sponsor associated with this institution. The researcher wrote a formal request to the PI and Director of the Caribbean Exploratory Research Center, School of Nursing at the University of the Virgin Islands, Dr. Gloria Callwood requesting her sponsorship (Appendix C). Dr. Callwood graciously accepted and submitted a signed letter affirming this to the researcher (Appendix F). This letter was then added to the IRB documents requested by the University of the Virgin Islands and was submitted electronically through their IRB database IRB.net. After careful deliberation, the IRB team from the University of the Virgin Islands approved the researcher's application and access to the study population was granted.

The researcher traveled to the Islands of St. Croix, St. Thomas and St. John to recruit participants. The study was advertised using flyers that highlighted the basic purpose and

fundamental objective of the study. The flyer also gave a description of the inclusion and exclusion criteria for the research participant, and a description of the token of appreciation awarded to the participants for participation in this study. It listed the researcher's contact information, the contact information for the Barry University faculty member overseeing the researcher's study, the Barry University IRB point of contact and the University of the Virgin Island's contact person sponsoring the researcher and the contact number for the University of The Virgin Islands IRB (Appendix D).

Flyers were handed out in local shopping centers, and left at local businesses with permission from the business owners. Flyers were also handed out at local schools and churches. An attempt was made to reach administrators of a local clinic to hand out flyers at that facility; however, multiple attempts were of no avail and so therefore yielded no response. Recruitment for a purposive sample of individual participants was embarked upon first. As participants called, interviews were set up and took place safe location that fostered privacy and clear communication. The locations varied, but each venue met the above-mentioned criteria and was mutually- agreed upon by both the participant and researcher. Most participants took flyers with them after their interview, which they subsequently gave to other family and friends who met study criteria. These individuals eventually called and scheduled interviews for themselves as well. Although the researcher tried to solicit participants from the Island of St. John, the response rate there was poor. Unfortunately, due to time constraints, the researcher continued with the participants who were readily-available on the larger Islands.

Recruitment for Phase Two of this project also took the same form. The researcher made some contacts during the initial trip to the Islands who agreed to participate in this phase of the data collection process. She contacted these individuals via phone to verify continued interest

prior to traveling back to the Islands for the second phase of the data collection process. Two of these individuals confirmed continued interest and were retained for the study. Flyers were again also used to recruit the other two participants in this phase. These were left at the business used previously in the initial data collection stage with permission from owners again. They were also distributed at local schools and churches. The flyer again gave a description of the inclusion and exclusion criteria for the research participant, description of the token of appreciation awarded to the participants for participation in this study. It listed the researcher's contact information, the contact information for the Barry University faculty member overseeing the researchers' study, the Barry University IRB point of contact and the University of the Virgin Island's contact person sponsoring the researcher and the contact number for the University of The Virgin Islands IRB (Appendix D). Contacts were made with interested individuals who met the inclusion and exclusion criteria and interviews took place in the conference room of a local business with the consent of the owners.

Inclusion Criteria

The inclusion criteria for phase one purposive and snowball sample were as follows:

1. Persons between the ages of 18-80.
2. Native of the Virgin Islands or must be an acculturated United States Virgin Islander. (Acculturation will be measured by the length of time that the participant has lived in the island; for this study acculturation is equal to approximately five years. This is enough time for that individual to become acclimated with the environment for and the customs).
3. The participant must have a self-reported diagnosis of hypertension for greater than one year.

4. Must have been placed on antihypertensive medications by a healthcare practitioner.
5. Participant must be able to speak, read and write in English.
6. Participant must have access to a telephone.

Inclusion criteria for Phase Two the theoretical sample were as follows:

1. Persons between the ages of 50-85 years of age.
2. Self-reported diagnosis of hypertension for 20 years or greater and must be a native of the Islands or must be acculturated to the Islands for at least 20 years. (These time frames are enough to classify these participants as experts on this group. A healthcare practitioner must have prescribed some mode of hypertensive management to the participant.)
3. Participant must be able to speak, read and write in English.
4. Participant should have access to a computer.

Exclusion Criteria

Exclusion criteria for Phase One purposive and snowball samples were as follows:

1. Individuals who do not have a diagnosis of hypertension
2. Individuals who have the diagnosis of hypertension but have not been placed on any hypertension modifying management by a healthcare practitioner
3. Persons who were born outside of the USVI or have been living on the Islands for less than five years will not be considered for this study because this individual would not have met the acculturation criteria delineated by the researcher.
4. Individuals who do not speak, read or write in English will also be excluded from this study.

5. Persons who are younger than 18 years of age and those who are older than 80 years of age will not be considered for this study.
6. Individuals who do not have access to a telephone will not be considered for this study.

Exclusion criteria for phase two the theoretical sample were as follows:

1. Individuals who were not born in the United States Virgin Islands or those who have not lived in the USVI for a period longer than 20 years.
2. Persons younger than 50 years of age and those who are older than 85 years of age will not be considered for this study.
3. Individuals diagnosed with hypertension, but who have not been placed on antihypertensive medications by a healthcare practitioner will be excluded from this study.
4. Persons unable to speak, read or write in English were not considered for this study.

Ethical Considerations/ Protection of Human Subjects

A qualitative method of inquiry does not cause the participant any physical distress; it does not involve the participant's consumption of drugs or their engagement in any medical therapies. There is a risk with qualitative research that the participant may suffer emotional distress as a result of discussing sensitive information with the researcher; however, this study does not propose such risk. There is no known risk of distress resulting from this study, as the information provided by participants is not of a sensitive or character-damaging nature. The nurse researcher has a duty to uphold the ethical principles asserted by the Belmont Report of autonomy, beneficence, non-maleficence, fidelity and justice for the client when conducting a study. Before commencing with

the data collection process, the researcher met the mandates of the IRB committees of both Barry University where she is a student and the University of the Virgin Islands, which gave her access to the population of the USVI. These IRB committees deemed that ethical standards were been upheld as outlined in the procedures outlined for this study. Once approval was obtained, the researcher was then granted access and approval to initiate this study with the population of the United States Virgin Islands. The IRB goal is to assure that research is conducted in a fair and ethical manner so that the participant is not exposed to untoward physical, emotional or psychological harm.

To ensure autonomy, the researcher addressed any fears regarding the research that came in the forms of questions regarding data collection methods and other procedures related to this study. The researcher prior to initiating the interview process addressed any questions the participants may have had regarding the study and or data collection procedures. The participants were informed of the purpose of the study and how the information obtained from the study will be used. The participants were also given a detailed description of the role that their interview would potentially play in the study. The researcher explained the goals of the study to the study participants, so that they would be aware of the researcher’s intent to raise awareness and possibly find solutions to decrease the morbidity and mortality that is a result of this disease process among theirs and like populations. None of the participants in this study were coerced or forced to participate; therefore, each participant was informed of their right to refuse participation at any point. At the beginning of each interview, participants were given time to read the informed consents (see Appendix B) and all questions and concerns were addressed at this point.

In upholding the ethical principal of non-maleficence, the researcher monitored each participant closely during the interviewing process for non-verbal signs of discomfort stemming

from questions posed, subjects being discussed, or discomfort related to the setting. Since all three islands are very small, and like most small communities-several people know each other to some degree, some participants voiced hesitation to participate in this study for fear of other people finding out about what they disperse to the researcher. The researcher explained to each participant regarding his or her right to agree or disagree to participate in this study.

Each participant was informed that to ensure their privacy the researcher ascertains that the information given by participants would be held in strict confidence. For continued reassurance of privacy, each participant was asked to choose a pseudonym to be used for study. This name became the source of reference for that individual participant throughout the study, allowing his or her own identity to be obscured. Participants were also assured that the only persons who listen to their recorded interviews and read the transcribed report would be the researcher and the chosen professional transcriptionist. The transcriptionist was mandated at the start of the study to sign a disclosure form, prohibiting him/her from dispersing any information to which he/she, is exposed (see Appendix E). Participants were assured that their true identities will never be disclosed at any point during the study, so that they felt comfortable in giving as much as possible information without reservation. Each participant was assured that the information they provided will be kept in a safe place and will not be accessed by any other individual besides the researcher and transcriptionist. They were informed that transcription of their interviews, demographic data and informed consents will be kept indefinitely in a locked safe at the researcher’s home office. They were also informed that their informed consent with their real name and signatures will be kept locked away in a different file from their transcriptions and their demographic information. Recorded data will be kept for a period of 90 days after completion of the study, after which it will be permanently erased. Transcribed data will be kept indefinitely.

All participants were treated fairly. The participants were informed that their involvement in this study is purely voluntary and that they had the freedom to withdraw from the study at any time that they desired, refuse to answer any question(s) and refuse to participate even after starting the interview process. Participants were awarded a $25 American Express gift card as token of appreciation for their participation after they signed their consent form agreeing to participate in the study. They were also told at that point that the gift card awarded to them was theirs to keep even if they decided to withdraw their participation at any point or for any reason while the study is in progress.

Data Collection Procedures

Grounded Theory is a dynamic interactive process that requires creativity and validation to uncover a theory that could scientifically explain a phenomenon (Strauss and Corbin, 1990). Data collection in this process is systematic and ongoing, but requires the theoretical sensitivity of the researcher to identify and then use inductive and deductive processes to generate concepts from data that could be integrated and later refined to generate theories that can explain phenomenon. Corbin and Strauss (2008), advocates that the researcher engages in a storytelling-type discussion with the participant. The researcher in this case serves as a facilitator gaining useful insight not just from the verbal discourse but also by observing the non-verbal cues that contributes to the obtaining of insightful data. The researcher engages the participant in discourse by clarifying statements, which helps to effectively deduce concepts from data that can be analyzed and later integrated (Strauss and Corbin, 1990).

Before the initiation of data collection, the researcher sought and gained approval to conduct this study from the IRB committee at Barry University and the University of the United States Virgin Islands. Upon receiving word confirming approval from all the identified

organizations preparation for data collection began. Phase I of the study was conducted first with individual interviews and after data was analyzed and themes were established Phase Two, which entailed the focus group interviews followed. On the days of the scheduled interviews the researcher greeted each interviewee by name and thanked them for their participation. She then proceeded to explain the purpose of the study and the procedures of the interview to the participant. Prior to beginning the interview process, each participant was given the inform consent. They were given time to read the consent and then additional time to ask questions of the researcher. The consent described the purpose and process of the study and notified the participant that by signing this document they were attesting that they were given information regarding all aspects of the study, including any associated risk and benefits. After all questions were answered regarding the study and the consents were signed by the participant.

Individual participants were asked to choose a pseudonym, which they would use to identify themselves throughout the interview. This step was taken to afford privacy and confidentiality for each participant. The focus group participants were instructed that they too could choose a pseudonym, and the researcher would use this name to identify them throughout the study; however, because of the forum of the interview privacy for them could not be ensured. The researcher did ensure the focus group participants that confidentiality would be ensured from her part. She also took the opportunity to ask all participants the courtesy of ensuring the privacy of each group member. After establishing the pseudonym, each participant was given ten minutes to complete a demographic questionnaire. At the completion of the demographic questionnaire and prior to starting the interview, the researcher handed each participant a $25.00 American Express gift card as a token of appreciation. Prior to starting the interview, all participants were again

reminded that they could choose to stop this interview process at any time if they no longer wanted to participate.

All interviews in this study were conducted through face-to-face encounters. All interviews were recorded using an iPad and an iPhone and transcribed verbatim either by the researcher or the paid transcriptionist. The individual interviews lasted between 29 and 59 minutes. The focus-group interview was scheduled for 60 minutes; however, the interviewees got engrossed in a discussion and when the researcher signaled that the interview was over, they requested to finish, so this interview then lasted 75 minutes. All interviews were conducted in a semi-structured format using open-ended questions. The questions focused on each participant's experience with high blood pressure and how they manage this. The researcher opened all the interviews with the following statement: "please tell me what you know about hypertension". The researcher allowed for each participant to give their own explanation of their perception of what hypertension was, and then to elaborate on which occasions led to an active discussion of the disease and its management.

At the completion of the individual interviewing and transcribing process, the researcher attempted to conduct a member-check by reaching out to each individual interviewee with a follow-up call to review the transcribed data. Unfortunately, the researcher was unable to follow-up with two of those participants. Failure to contact these individuals was due to time constraints and lack of ability of the researcher to obtain a viable contact number for these individuals. The member-checking is an important part of the data collection process, because this process allows for the researcher to verify with participants if the information transcribed adequately reflects what he or she was trying to relay in the interview (Creswell, 2013).

The researcher used field notes, journaling and memoing during the data collection process to help with data organization. These methods helped the researcher keep all the information obtained in perspective so that concepts were revealed easily. Conceptual labels were used to assist with data interpretation (Strauss and Corbin, 1990). Memoing was used in order to integrate concepts, which allowed for solid theory formation (Strauss and Corbin, 1990).

Interview Questions

The interview process was very informal. The researcher tried to create a very relaxed environment so that each participant would feel as though he/she is free to discuss any aspect of his or her experience without judgment or penalty. At the opening of each interview, the researcher reminded each participant that the interview forum was a no-judge zone and that all responses were strictly confidential. The researcher started with very open-ended questions: "tell me what you know about hypertension" or "your experience with hypertension is?" In the beginning stages of the interviewing process, the researcher used a set of previously constructed questions that she complied based on the previously conducted research (see Appendix F), but as concepts started emerging, the trajectory of questions shifted focus to the emerging concepts and eventually the emerging categories and themes. The researcher also used probing, clarifying and follow-up questions when appropriate to help solidify aspects of data that were not clear (Munhall, 2012).

Demographic Data

The demographic data collected during a study gives the researcher an idea about the population that he/she is studying. Demographic data allows for transferability of research findings (Creswell, 2013). A demographic questionnaire was developed by the researcher (see Appendix G) and used during the study to help define the audience. Since this research evaluated the critical factors that influence adherence to therapeutic medical regimen in the hypertensive population

from the United States Virgin Islands, it was very important for the researcher to capture participants that were first from the United States Virgin Islands and then hypertensive. It was also important in this study to get a good representation of the hypertensive population on the Island, meaning participant's age group, educational status, and financial status had to vary as it does among the true population. The population in this study featured various age groups, gender and educational background. All persons were either born on one of the Islands in the Virgin Islands or were acculturated per the researcher's guidelines.

The demographic questionnaire used in this study obtained information regarding interviewee age, sex, race, island or country of origin (If not from the Virgin Islands). If participant is not originally for the United States Virgin Islands it assessed the length of time that the participant has been living on the Islands, highest degree completed, type of work, socioeconomic status, amount of time with diagnosis of hypertension, number of antihypertensive medications taken daily. The questionnaire assessed accessibility to care and evaluated whether participants had healthcare insurance, and a primary care practitioner for follow up capability. There were four questions regarding adherence practices assessed with this questionnaire:

1. Have you ever eliminated taking your blood pressure medications?
2. Do you deliberately omit taking doses your medications blood pressure medications regularly?
3. Have you missed taking your blood pressure medications in the past week?
4. Do you ever utilize methods not prescribed by your healthcare provider to treat your high blood pressure?

Data Analysis

Grounded Theory is a research method that focuses on theoretical generation rather than theoretical description of a social process or phenomenon (Glaser and Strauss, 1967). This process uses constant comparison as a process of theory generation. Glaser and Strauss (1967, p. 21) explained, “Comparative analysis is a general method just as are the statistical methods (all use the logic of comparison)”. Strauss and Cobin (1990) describe the data analysis process as interactive, wherein the researcher uses innovation, but must also employ substantiation to explain a phenomenon. A Grounded Theory researcher must be immersed in the data always and calls for the removal of mental clutter which could cloud creativity and block flow of concepts necessary to generate a theory that adequately describes the phenomenon (Strauss and Corbin, 1990). There are now several methods of Grounded tTheory that are used to deduce theory from data to describe a phenomenon. This researcher has chosen to employ the Straus and Corbin’s method of grounded theory data analysis to explore the phenomenon in question.

The Strauss and Cobin’s method data analysis allows for the researcher to delineate pertinent categories that will produce workable theories regarding the study phenomenon using systematic procedures. This method, although systematic like any other Grounded Theory method, requires that the researcher possess a level of theoretical sensitivity to extract meaningful cues hiding in the data (Strauss and Corbin, 1990). Theoretical sensitivity is the sight that a researcher possesses to be able to deduce these nuances in the data (Strauss and Corbin, 1990). The personal and professional experiences of the researcher that lead to this research study, plus the review literature served as a solid base for theoretical sensitivity for this study and aided in the analysis of the data.

Open Coding

All interviews in this study were collected through a face-to-face interviewing process and the researcher used observation and the documentation with field notes to guide in the analytic process. A professional transcriptionist employed by the researcher transcribed some of the interviews into a Microsoft word document in a column. This format provided a venue for adequate constant comparison to occur. After the researcher received the transcriptions, she listened to them again to verify the transcription and to also start identifying concepts. The researcher then entered the first coding stage of the data analysis process, which was open coding. In this stage, concepts are identified and categorized appropriately according to their relating characteristics and scopes (Strauss and Corbin, 1990). The researcher took the transcripts, field notes and memos and asked questions about the data. Each word, line and paragraph was analyzed and constantly compared, as the researcher searched to associate meaning and evaluate the data trying to identify similarities in the stories told in order to pull concepts. As the concepts started emerging, the researcher then started grouping these in to verifiable categories. As the interviewing and transcribing process continued the researcher kept comparing the concepts of how hypertension was viewed by the participants, what their concepts were about management, what they knew about how the disease worked and the effects it had on their bodies.

After forming multiple arrangements of these raw categories, the researcher then started to refine these into more condensed categories which allowed her to pull them together as subcategories. This process of comparing and compiling lead the researcher to formulate different questions that would explain and verify these categories and subcategories. The categories and subcategories formed in open coding are abstract and represent the most infantile

classification of the data (Strauss and Corbin, 1990). However, they shaped the study sample and directed the researcher into the second stage of coding the axial coding.

Table 1. *Open Coding*

Participant	Narrative	Open Coding
Candy	It is inconvenient… very inconvenient cause you must watch everything and labels and you have to cook without salt and you go out to dinner and you have to make special orders "please don't put any salt" so it is very inconvenient	Inconvenient… must consider food Interrupts socialization must make special order
Field Notes:	Interview at participant's home. The surroundings were very quiet, overall this was a great interview Expression of frustration when she explains.	
Memos	Diagnosis is life changing for her… so to take care of herself she has to consider this disease. Others without the disease do not have to consider anything	

Axial Coding

In the axial coding stage, the researcher began to assimilate categories based on the relationship identified among previously established subcategories (Corbin and Strauss, 2008). In this stage the researcher took the subcategories and used inductive and deductive processes to evaluate data such as asking questions about the data, ("what are the similarities", "what is the resounding message here?", "how do these relate?"). Constant comparison was also used in this phase of data analysis (Strauss and Corbin, 1990). This coding process allowed the researcher to take conditions and integrate them to establish links in the data that allowed for the formation of

themes that led to conceptualization of the phenomenon (Strauss and Corbin, 1990). The researcher took all the concepts established in the open coding and synthesized them. The evolved phenomenon was then further evaluated by looking at its specific properties, casual relationships, context, intervening conditions, action/interactional strategies and consequences related to factors that contribute to that phenomenon (Strauss and Corbin, 1990). Patterns of categories and subcategories were further explored to identify significant variations (Strauss and Corbin, 1990). Hypotheses about the participants' concepts of hypertension, hypertensive management and environmental factors contributing to theses phenomenon were evaluated against established data, which served to accept the formation of empirically sound categories (Strauss and Corbin, 1990). In the axial phase, of analysis helped to ascertain and convey classifications in the data, which resulted in construction of an exemplar model that allowed meaning to be derived from the phenomenon (Strauss and Corbin, 1990).

Table 2. *Axial Coding*

Participant	Narrative	Axial Coding
Jane	To tell you the truth, I don't think so cause when you are doing whatever and you are doing or whatever, you don't really think about high blood pressure, you think about how you feel…. if me feel good then me good	Not thinking about high blood pressure Considers feelings "If I feel good then I am good"
Field Notes	Granddaughter coming into the room trying to distract interview….	
Memos	Association of sickness with how she feels. Because high blood pressure has no symptoms and she does not feel sick able to ignore… Ignoring of high blood	

	pressure fosters non-adherence…. Knowledge deficit… just because you are not feeling symptoms does not mean blood pressure is not high.. Does not understand the disease…. Health Care Literacy…	

Selective Coding

Axial coding gave way for the third and final coding stage selective coding. In this stage of the data analysis the main themes were refined and therefore offered a clear description of the phenomenon (Corbin and Strauss, 2008). In selective coding, a core concept is identified and through the process of methodically relating into a functional description of reality, that is scientifically-applicable and grounded in the data (Strauss and Corbin, 1990). There are several steps in this process of selective coding that allow the researcher to arrive at a description of a conceptual paradigm. The first step of selective coding the researcher embarked on was to identify the story depicted in the study (Strauss and Corbin, 1990). The researcher became the instrument and focused all her attention on the focal points of the data. She proceeded to take these focal points and merge them into a summative process that or fundamental expression that was able to discern the phenomenon of influences of hypertensive adherence among hypertensive United States Virgin Islanders. Secondly the researcher related all identified categories to the core category identified in the story line previously identified (Strauss and Corbin, 1990). The researcher then used methods of constant comparison and asking questions of the data to group the categories according to the observed pattern of characteristics (Strauss and Corbin, 1990). This process ultimately resulted in development of a perspective that defines the phenomenon. The next step calls for validation of established theory against established

literature. This leads to the final step of refining established theory and presenting it (Strauss and Corbin, 1990). The end goal of selective coding was the development of a substantive theory that offers a theoretical perspective postulating insight into the critical factors that influence therapeutic medical management in the hypertensive United States Virgin Islander.

Research Rigor

The rigor in qualitative research is measured by the degree of trustworthiness. Trustworthiness is the measure of how closely the data gathered reflects the thoughts, attitudes and perceptions of the participants (Munhall, 2012). The qualitative researcher must pay attention during the interview process so that the message is not just relayed through the verbal contents of the interview, but that non-verbal cues communicated by the participant are also taken into consideration and conveyed in the analysis of the data. Validation could be done using triangulation, which uses collaborating evidence from different sources to substantiate themes or viewpoints identified in the study (Creswell, 2013). Triangulation can use procedures such as observation, focus groups and individual interviews to establish data.

Establishing trustworthiness depends on evaluating the true value of the study, assessed through the evaluation of credibility (Krefting, 1991). The study’s trustworthiness is also measured through assessment of the study’s consistency measured through dependability of the study (Krefting, 1991). Neutrality is also a measure of the study’s trustworthiness that is evaluated through the confirmability of the study (Krefting, 1991). Another aspect of trustworthiness must also be assessed through the applicability of the study; this is assessed through measuring of the study’s transferability (Krefting, 1991).

Credibility

Credibility measures how close the findings of the study relate to what is real (Shenton, 2004). Credibility was maintained in this study through the use of various strategies. Choosing the appropriate research method for the study question, using appropriate sampling methods and using various approaches to compile data is one of the ways that credibility was ensured in this study. This study called for a research process that adequately evaluated the population of hypertensive individuals in the United States Virgin Islands. The process of data analysis employed in the Strauss and Corbin Grounded Theory method provided operationally-sound procedures for which to evaluate this topic. Credibility also depends on the researcher's ability to question the participant in such a way that the information obtained is truthful (Shelton, 2004). Each participant was assured that the interviewing forum was a judgment-free zone, and that there was no right answer to the question except the one they deemed adequate. Participants were also assured confidentiality of information so that they would feel free to speak without fear of repercussions. The researcher used open-ended questions and probing techniques during the interviewing process only to clarify data. The researcher also restated responses for participants to clarify whether or not their statements had been adequately relayed.

The researcher also ensured credibility by employing the tenants of triangulation when evaluating the themes obtained through evaluation of this study. These measures included evaluating the findings against several sources of literature that have evaluated similar content to solidify and add credence to established themes in the study (Creswell, 2013). Triangulation was employed during collection as the researcher used interviews, observation and collection of demographic information through survey tool to ensure that all measures are taken to answer the research question as thoroughly as possible (Krefting, 1991). The researcher also used a focus group interview to verify teams that were identified during the analysis of the individual

interviews. Moreover, the researcher utilized the help of her mentor and chair to interject another perspective and ensure that there is no researcher bias reflected in the emerging themes. Throughout the study, member-checking was performed. Some participants were available to review their transcripts, while others received a phone call to verify data. Adjustments were made in the data based on the participant's responses.

Krefting (1991) reports that sampling various domains of the community in a study is another aspect of ensuring credibility. The sample selection process for this study assured credibility as the researcher tried to obtain representation from all of the Islands in the United States Virgin Islands. The researcher also tried to represent various age groups and genders. Assessing reflexivity in a study is also a crucial aspect also crucial in ensuring credibility in a study. Reflexivity is ensured in this study as the researcher assesses her past experiences and personal history with the topic (Krefting, 1991). The researcher actively engaged in field journaling during the research process, and actively documenting emotions, hypothesis and conclusions encountered during the data collection process; this act of journaling assisted the researcher in distinguishing her feelings and emotions from that of the participants.

Dependability

The dependability of a study implies that if the study is reproduced, the results relayed will similar to the ones obtained from the study in question (Shelton, 2004). The researcher completing the study documented the study in a detailed manner with explicit descriptions of the procedures and processes of sampling, data collection and data analysis used to obtain data and arrive at study conclusions. Documentation of these processes in such a scrupulous manner ensures that this study could be adequately reproduced if another researcher wishes to investigate this equivalent phenomenon (Shenton, 2004). The researcher also used code/recode procedural

strategies during the data analysis phase of the study to enhance dependability. This strategy involves conducting an initial coding and then allowing a period of two weeks to lapse and then recode the data. The researcher then compares initial coding results with recoding results (Krefting, 1991). Dependability for this study was also maintained by the constant checks and rechecks of the data collection and analysis techniques proposed and utilized throughout this study by expert PhD faculty.

Confirmability

Confirmability ensures that the data produced by the study is indeed what the study participants intended to relay and not what the researcher themselves were trying to convey (Shenton, 2004). To ensure confirmability, the researcher conducted a reflexive analysis, which helped her to disclose her beliefs and attitudes towards the subject, and her connection with the topic so that preconceived judgments may be averted so that it does not discredit the data in the long run (Shenton, 2004). The researcher actively- engaged in reflection and journaling throughout the research process to identify biases that may affect the ultimate outcome of the study. The researcher attempted to assure confirmability by providing at least of two sources to support every claim or interpretation made because of the study findings (Krefting, 1991).

Transferability

For a study to be useful, it must be able to fit a broader scope than the study participants (Shenton, 2004). Transferability is difficult to ensue in qualitative research, because the sample sizes are smaller than that of quantitative research; however, the data must be applicable to the group studied and the geographical area in which the group lives (Shelton, 2004). To ensure transferability, the researcher tried to solicit participants from various parts of all three islands. However, she was unsuccessful in obtaining participants from the smallest Island St. John.

Nevertheless, the larger more-populated Islands of St. Croix and St. Thomas had a great representation in the study. The researcher also used a demographic questionnaire to assess various components of all the participants. The demographic information collected was used to evaluate the characteristics of the study participants against the demographics of the people of the United States Virgin Islands and served to attempt to assimilate these as close as possible to each other.

Chapter Summary

This chapter gave a detailed description of the methods that will be used to conduct this research study. It went over the research design and discussed the reasons for choosing this design. The chapter also covered the chosen method and gave an explanation as to why this method was best suited for this study. It gave a brief synopsis on grounded theory and discussed the Strauss and Corbin's grounded theory method which will be the method used in this study. This chapter discussed the intended sample and setting, methods of enlisting this sample and delineated the inclusion and exclusion criteria used to designate an appropriate study sample. Ethical considerations that must be taken into consideration when completing research studies were also highlighted. The data collection procedures were outlined and considerations for interview questions and demographic data was presented.

CHAPTER FOUR

FINDINGS OF THE INQUIRY

Overview

This study used a qualitative research inquiry operationalizing the Grounded Theory methodology as informed by Strauss and Corbin. The study had two distinct phases. Phase One was comprised of 21 individual interviews, which the researcher transcribed, and analyzed line by line and identified concepts. These concepts were later grouped into the following core categories: ***mistrusting, reacting, educating, socializing*** and ***financing***. Analysis also yielded several subcategories that conceptualized the voices of the participants: ***perceived lack of provider caring, perceived lack of cultural sensitivity, perceived lack of adequate provider credentialing, perceived inflation of healthcare cost, fear of complications, symptom-based management, denying, relying, owing, defying, dietary influences, use of herbal remedies, strong sense of spirituality, healthy eating, purchasing medications*** **and** ***long term sustainability*.** Based on identified aspects of the dimensions of these categories and subcategories, the researcher later analyzed and theoretically integrated these to arrive at the illustrative social process of ***deciding***. The participants were all either born in the United States Virgin Islands or acculturated (Living on the Island for a period longer than five years). They all had a self-reported diagnosis of hypertension for longer than one year and were placed on medications for their hypertension by a healthcare practitioner. Their identities were protected through the use of pseudonyms.

The second phase of this study included a focus group of four participants. These participants served as the expert group or the theoretical sample for this study. All participants for the focus group were born in the Virgin Islands or had lived there for a minimum of twenty

years. They all had a self-reported diagnosis of hypertension for twenty years or more and were placed on medications for their hypertension by a healthcare practitioner. Despite the fact that the focus group participants all knew each other for the most part, some choose to use a pseudonym while others choose not to conceal their identities for the study. The interviews for both phases were conducted through face-to-face encounters and were transcribed by the researcher and a transcriptionist.

Before data collection began, the researcher sought and received IRB approval from Barry University (School where researcher is a student) and from the University of the Virgin Islands (To gain access to the population of the United States Virgin Islands). Participants were recruited through flyers that were distributed at local shopping centers, churches and through the voluntary help of local business owners. Participants were also recruited through the word-of-mouth method. The sample was initially purposive, as the researcher sought to capture participants who would inform the tenants of the research question; however, sampling strategy later took on a snowball- type of effect, as initial participants referred friends and family members to the study. Participants who were recruited through snowball sampling methods were scrutinized by the researcher to ensure that they met descriptive criteria prudent to answering the research questions posed in this study. The final sampling technique utilized was theoretical sampling. This process took place as themes and categories started emerging. The process of theoretical sampling was enhanced through a review of the literature and consultation with experts. Interviews were conducted in a semi-structured format. The researcher used open-ended, probing and clarifying types of questions to obtain data from participants. All interviews were recorded using an iPhone and an iPad recording device.

Data analysis used the systemic process of open coding, axial coding and theoretical coding as outlined by the Strauss and Corbin analytic method of Grounded Theory. The process started with open coding. The researcher took each transcribed interview and reviewed it through a constant comparative process pulling apart the data line-by-line, word-by-word and paragraph-by paragraph disengaging the data and unveiling, naming and nurturing concepts into categorical and sub-categorical ideologies that conferred meaning about the phenomenon (Strauss and Corbin, 1998). This process gave way to axial coding, which assimilated the categories and subcategories into a constructed format that allowed the researcher to more accurately answer questions about the phenomenon (Strauss and Corbin, 1998). During this process, the researcher used diagrams and schemas to pictorially-demonstrate theoretical relationships among categories and subcategories. Both the open coding and axial coding process continued through the entire analysis of the data until saturation of all categories was established (no new themes or categories emerged) (Strauss and Corbin, 1990).

The final coding process of theoretical coding gave rise to the final core categories **of *mistrusting*, *reacting*, *educating*, *socializing*** and ***financing*** and the final subcategories: ***perceived lack of provider caring, perceived lack of cultural sensitivity, perceived lack of adequate provider credentialing, perceived inflation of healthcare cost, fear of complications, symptom-based management, denying, relying, owing, defying, dietary influences, use of herbal remedies, strong sense of spirituality, healthy eating, purchasing medications* and *long term sustainability*,** were all integrated, conceptualized and finally theorized into the social process of ***deciding*** which serves as the interpretive descriptor that elucidates the phenomenon of adherence to therapeutic medical management in the hypertensive person from the Unites States Virgin Islands.

The second phase of this research process comprised of a focus group interview. This interview included four women who met the inclusion and exclusion criteria delineated by the researcher for participation in Phase Two of this research study. This group served as an expert group offering dialogue both on the United States Virgin Islander and their views on management of hypertension. The focus group interview took place after analysis of the individual interviews had taken place in Phase One. This interview served to verify categories and sub-categories that emerged during individual interviews.

In a Grounded Theory study, the researcher is the analytical instrument that gives life to the derived theoretical framework, with this knowledge the researcher relies on theoretical sensitivity to help formulate the data (Strauss and Corbin, 1990). In this study, the researcher used her theoretical sensitivity on the topic to guide the study. In addition, reflective journaling was also utilized to help bracket so that preconceived notions did not daunt the analytic process essential to conceptualize and formalize the voices of the participants. The researcher also used member checking as a source of data clarification. Some of the member checking was conducted via face-to-face encounter; the others were completed via the telephone. Throughout the analytic process, the researcher used memoing to help bring life to each category and subcategory. In addition, the researcher creatively used comparative analysis throughout this process to ensure that data was adequately scrutinized for subtleties that could significantly contribute to the establishment of the core categories and the social process of ***deciding***.

Sample Description

This study involved two phases each requiring separate sampling procedures. The individual sample in phase one was comprised of (*N*=21) individuals from the United States Virgin Islands (born on the Islands or acculturated). These individuals had a self-reported

diagnosis of hypertension for greater than one year and had been placed on medications to treat their hypertension by a healthcare practitioner. The researcher started with purposive sampling, as these participants were recruited through flyers handed out and placed in the previously mentioned locations. Snowball sampling was also used as initial participants referred family members and friends to participate in the study. The final sampling technique retained in this aspect of the study was theoretical sampling. This sampling technique emerged through evaluation of emerging categories and evaluation of the data.**Table 3** highlights the demographics of the population that participated in Phase One of the study.

Table 3. Demographic Characteristics of Phase 1 (Individual Participants) N=21

Variable	**Category**	**Number**	**Percentage**
Age	18-30	2	9.5%
	31-40	2	9.5%
	41-50	3	14.2%
	51-60	5	23.8%
	61-70	7	33.3%
	71-80	2	9.5%
Gender	Male	8	38.1%
	Female	13	61.9%
Race/Ethnicity	*Black or African American*	19	90.1%
	Hispanic or Latino	0	0
	Non-Hispanic White	0	0
	Caribbean Indian	2	9.5%
Education Completed	*Grades 1 through 8(Elementary)*	3	14.2%
	Grades 9 through 11 (Some high school)	1	4.7%
	Grade 12 or GED (High school graduate)	6	28.6%
	College 1-3 years (Some college or technical school)	7	33.3%
	College 4 years (College graduate)	1	4.7%
	Graduate School (Advanced Degree)	3	14.2%
Employment Status	*Employed for wages*	12	57.1%

	Self-employed	4	19.0%
	Retired	5	23.8%
Island or Country of Origin	*St. Croix*	6	28.6%
	St. Thomas	1	4.7%
	St. Kitts/Nevis	3	14.2%
	Antigua/ Barbuda	3	14.2%
	Trinidad/Tobago	1	4.7%
	St. Lucia	4	19.0%
	Montserrat	2	9.5%
	Dominica	1	4.7%
Number of Years living in the United States Virgin Islands	*11-20*	4	19.0%
	21-30	2	9.5%
	31 and greater	15	71.4%
Health Care Insurance	*Yes*	16	76.2%
	No	5	23.8%
Number of years with diagnosis of hypertension	*1-5*	5	23.8%
	6-10	5	23.8%
	11-15	3	14.2%
	16-20	2	9.5%
	21-25	2	9.5%
	26-30	3	14.2%
	31 and greater	1	4.7%
Primary Care Physician	*Yes*	21	100%
	No		0
Number of Antihypertensive Medications Taken Daily	*1 Tablet*	10	47.6%
	2 Tablets	6	28.6%
	3 Tablets	4	19.0%
	4 Tablets	1	4.7%
Stopped taking Antihypertensive Medications	*Yes*	17	81%
	No	4	19.0%
Deliberately Omit Doses of Antihypertensive Medications	*Yes*	7	33.3%
	No	14	66.6%
Have Missed Medications in Past	*Yes*	7	33.3%
	No	14	66.6%

Week			
Use Other Methods Not prescribed By MD for BP Control	*Yes* *No*	12 9	57.1% 42.9%

This section will provide a summative description of the participants in this study. The description will be presented with the participant's pseudonym to protect the participant's real identity and maintain confidentiality. There were 21 individual participants in this study. Each had a diagnosis of hypertension for at least one year and were all born in the United States Virgin Islands or acculturated. This section will describe each participant so that the reader could have some insight to the participants' distinctive physiognomies.

Candy Daniel: **Candy Daniel** is a 37-year-old, black female currently employed as an elementary school teacher. **Candy Daniel** was born on the Island of St. Croix and was diagnosed with hypertension approximately ten years ago. She has a primary care physician and takes one tablet daily to treat her hypertension. She tries to eat a low-sodium, low-fat diet and she tries to exercise regularly to control her blood pressure. She currently has no healthcare insurance and has some difficulty with regularly scheduled visits because of cost. **Candy Daniel** takes one tablet daily for her blood pressure, which she does not eliminate accidentally or deliberately. She reports using other methods not prescribed by her physician to control her blood pressure regularly. **Candy Daniel** expresses that she takes care of her blood pressure because her mother has suffered tremendously from all the adverse effects of the disease. She describes her reaction to her diagnosis of hypertension below.

> Oh I am a lot better now, the first year was a wreck, I was a disaster, I did not know what I could not eat, did not know what to eat… No Jesus this cannot be happening to me at a young age cause I am 37 so I would have been about 27 so I was pretty young, it was my

whole world was falling apart, I couldn't eat what I wanted to eat, I did not know what to do and it was nerve wrecking…

Myrtle Henry: **Myrtle Henry** is a 78-year-old retired black female, originally from St. Kitts and has been living on St. Croix for more than 31 years. She is a high school graduate; she was diagnosed with hypertension approximately 11-15 years ago. She does have healthcare insurance and she has a primary care physician that she sees regularly. **Myrtle Henry** takes one tablet for her blood pressure, which she does eliminate deliberately from time to time; however, she had not missed any of her medications within one week of her interview. She reports that she does not have an exercise routine, but that she stays very busy around her yard, which keeps her active. **Myrtle Henry** also reports eating a low-salt, low-fat diet to help maintain her blood pressure levels in a safe range. She does report using other methods not prescribed by her healthcare provider to control her blood pressure. She indicates that she uses "bush" (leaves with medicinal properties to control her blood pressure). Myrtle Henry confirms: "Well me raise up with me bush, so me does take me little bush to be honest. From me country I know the bush them and I take a little for the pressure and it helps".

Jane Lewis: Jane Lewis is a 66-year-old black female; originally from Antigua but living in the United States Virgin Islands for more than 31 years. She is a high school graduate. She is currently employed for wages; she is insured through her employment company. **Jane Lewis** has been diagnosed with hypertension for longer than 31 years. She has a primary-care provider who she has seen for many years, she is currently prescribed two tablets for her blood pressure that she should take daily, but admits to eliminating her blood pressure medications frequently although she had not missed any in the week prior to her interview. She also admits to using other methods besides those prescribed by her health care provider to control her blood

pressure. **Jane Lewis** reports that exercise in the past helped with her blood pressure management but she had to stop exercising, since she now has the responsibility of taking care of her granddaughter. She stated that she tried implementing a diet low in sodium in the past, but has since reverted to using more sodium in her foods due to an inability to tolerate taste of foods with very little sodium. **Jane Lewis** describes this initial diagnosis and attempts at disease management as follows:

> I went to the doctor, I wasn't feeling good and he told me I had high blood pressure. They say you have high blood pressure. They said you have to take this medication to help bring it down and that I have to come back at such and such a time and that's it. You have to change your diet… avoid salt and things like that. At first I was trying, but then you a try and eat it and it no taste good so when you eat and then you drink some water, take some aspirin and some bush and you go to sleep.

Mr. Indian: **Mr. Indian** is a 55-year-old Caribbean Indian male originally from Trinidad living in the United States Virgin Islands for more than 31 years. He is a high school graduate who currently owns and operates his own business on the Island. He was diagnosed with hypertension 1-5 years ago; he does have health care insurance. **Mr. Indian** has a primary care provider who takes care of his high blood pressure. He was prescribed one tablet to control his blood pressure but he does not take this medication often because he does not think that he needs to take it daily. He had not taken his blood pressure medication for several months but he affirms that he has the medication at home and is willing to take it only if he needs it. **Mr. Indian** admits to using other methods not prescribed by his healthcare provider to control his blood pressure. He does not believe in taking medications unless he absolutely must, and this he explains is only

when his body does not feel well. He disclosed the following as his thoughts regarding taking pills on a consistent basis:

> Well the first time somebody start to feel funny they run to the doctor. Doctor writes them a prescription they go to the pharmacy they go buy a tablet. So now they take the tablet, that now makes them feel better, but it has a side effect so then they go back to the doctor again and he gives them a tablet for that side effect so they go back to the pharmacy and they buy a new tablet, so their entire pay check is consumed in tablets.

Mary Joseph: **Mary Joseph** is a 65-year-old black female, working as a schoolteacher on the Island of St. Croix. She is currently two months away from graduating with her bachelor's degree. She is originally from the Island of St. Lucia but has been living on the Island of St. Croix for over 31 years. **Mary Joseph** does have healthcare insurance through her employer and she does have a primary care provider who she sees often. She has had the diagnosis of hypertension for approximately 18 years and currently takes two tablets daily to control her blood pressure. **Mary Joseph** reports only eliminating her medications when she forgets, which she states is very infrequent. She denies use of any other methods of controlling her blood pressure besides what her primary care physician prescribes. **Mary Joseph** confirms that she is very serious about her blood pressure management and divulged the following:

> Well I don't know if everybody think like me but I feel that high blood pressure is like a disease . . . to me, and I am very conscious of it. I keep seeing about high blood pressure . . . you know, like you . . . you know that something is not right with you because you have the high blood pressure and you can have a stroke, you know, anything can happen to you with high blood pressure. But I feel like I have a disease and it is high blood pressure. Just like you have diabetes and so on.

Blossom: Blossom is a 62-year-old black female, who lives on the Island of St. Croix. She has an advanced degree and is currently employed as a school interventionist in the public-school system on St. Croix. She is originally from St. Lucia but has lived on the Island of St. Croix for the past 41 years. **Blossom** was diagnosed with hypertension some 21-25 years ago and currently takes three tablets daily to control her blood pressure. She exercises and has implemented some dietary changes to maintain lower blood pressure. She has a primary care physician who manages her blood pressure; obtains healthcare insurance through her employer. **Blossom** denies use of any other methods of blood pressure management except what is prescribed by her physician. She communicated that she did not have a lot of information on hypertension, but she explains her understanding of the disease as: “Well, well, according to what the doctor was saying is when you eat too much salt and stuff like that . . . that’s what my thinking is”.

Valerie: **Valerie** is a 63-year-old black female who is currently retired. She is originally from the Island of Montserrat but has lived on the island of St. Croix for 31 years or more. She currently has health care insurance and does have a primary care physician living on the Island as well as one on the Main Land. **Valerie** was diagnosed with hypertension about five years ago, and takes two tablets daily to control this. She does not like taking medications, but she reports that she takes her antihypertensive medications every day unless she forgets, which does happen from time to time. She admits to using methods not prescribed by her healthcare provider to control her blood pressure regularly. **Valerie** does not like having the diagnosis of hypertension and made the following statement regarding this during our interview:

> I don't like it that I have it but it’s… I try… I don't cook with a lot of salt anymore, because salt is my favorite… uumm I don't, I do not like sugar that much so when I used

to make cereal instead of putting sugar I put a little salt, that's what I liked I have given it up not entirely the salt, and I don't cook with a lot of salt anymore and if I eat somebody else's food I feel like I can taste the salt really high uumm I try but I don't like having it but I am dealing with it the best and I take the medication because uummm I was told that if I did not take the medication the pressure may go up for whatever reason and I could get a stroke and I would not like to have a stroke..

Albert Cadet: **Albert Cadet** is a 56-year-old black male originally from St. Lucia, living on the Island of St. Croix for the past 15-20 years. He is a self-employed carpenter; he does not have healthcare insurance. He was diagnosed with hypertension about 7 years ago and currently takes 3 tablets to control his blood pressure daily. **Albert Cadet** believes in taking his medications and reports that he takes these daily unless he forgets. He reports that he only uses the medications prescribed by his physician to control his blood pressure. **Albert Cadet** gives a synopsis of how he was diagnosed with hypertension below:

Well I would say I did not know anything about what you call high blood pressure and whatever. One day I get up in the morning and get myself ready to go to the work. I sat down in the couch, I prayed and I drink my daily coffee as usual and get myself ready for around 6:30 for me to leave the house and I feel I am turning the world upside down and I started vomiting. Then I had to go to Frederickstead Health Center and that's where I know my pressure was high. I didn't know that at all. Then when I see doctor, doctor told me I have the high blood pressure. He said that it can knock me out and I don't know anything and that I just can be normal just the way I am here and it can knock me out, and since then I have been on medication up to a day like today.

John: John is a 55-year-old male of Caribbean Indian decent. He was born on the Island of St. Kitts but has lived in St. Croix for at least 20 years. **John** is a high school graduate who owns and operates his own business. He has a primary care provider who takes care of his hypertension, but he currently has no healthcare insurance so his health care cost is all out of pocket. **John** currently takes two tablets to treat his blood pressure daily, which he reports that he takes consistently as long as he is financially able to afford them. **John** reports that he does not use any means besides methods prescribed by his physician to control his blood pressure. **John** disclosed that he takes his hypertension very seriously and does not want to take chances with his blood pressure fluctuating because he is aware that there are lots of consequences to this. **John's** statement regarding what he thinks about blood pressure management is highlighted below:

> But sometimes even when people have it, sometimes take it lightly because they like . . . ah man I will drink the bush and I will drink that and stuff like that, but hey, you know, I'm not saying the bush doesn't work but everybody's body is different. Something might work for you and may not work for me so I can't depend on what method you use. If it was working for you, more praises to you but you know, my life is a little more than an experiment right now, so I try not to take too many gamble with that.

Filbert: **Filbert** is a 66-year-old black male native of St. Croix who is currently retired. He has end-stage renal disease and is currently on dialysis. He has been diagnosed with hypertension for approximately 11 years. **Filbert** receives care for his hypertension from his nephrologist. He currently takes two antihypertensive tablets, which he reports taking at all times unless he runs out of his medications. He shared that he currently uses other means to control his blood pressure

beside what is prescribed by his physician. **Filbert** communicated he used bush in the past and had an adverse reaction to the cocktail; he shares the story of this below:

> You know one time there is a bush called insulin, it's a pretty plant and I made tea out of it. I used to make tea out of it and (laughing) I think I put too much and I started getting these hallucinations and the clouds were just reforming themselves and every time I move they follow me and it was yeah.. I think I took too much of the bush itself. That's the part about these bush, if you don't know what you doing and you need a certain amount because you can overdose yourself you know.

Jasmine Guy: **Jasmine Guy** is a 35-year-old Black female born in Montserrat, but was brought to St. Croix as an infant where she has spent most of her life. **Jasmine Guy** is a certified pharmacy technician; however, she does not currently practice in this area--rather she works with her husband at their local business. She currently has no healthcare insurance but does have a primary healthcare provider both in St. Croix where she lives and in Virginia where she visits frequently. **Jasmine Guy** was diagnosed with hypertension approximately 3-4 years ago and currently takes one antihypertensive tablet daily. She reports eliminating her medication in the past but tries now not to miss taking it. Jasmine reports using other types of alternative therapies not prescribed by her healthcare provider to manage her blood pressure. **Jasmine Guy** believes that lifestyle habits are a big factor that fosters incidences high hypertension among persons from the United States Virgin Islands and believes that her diagnosis helps her with instilling better healthcare habits in her daughter. **Jasmine Guy** asserts that food preparation customs are a major factor contributing to the prevalence of hypertension on the Island; She believes that although heredity may play a role in the prevalence of hypertension, life style habits were key factors and attributed her hypertension to her diet. She made the following comments:

> I do know a lot of people who have family diseases and high blood pressure is one of them. Some have diabetes, high blood pressure. I know a lot of people that have, my mother have pressure, my grandmother have pressure so automatically I will get pressure. I don't know what much to say because when I was pregnant you know they told me that I would get diabetes; I would get high blood pressure because of my size or my weight or whatever. And none of these things happened. So I, like I said I believe my diet cause my high blood pressure because you want taste in your food but um you know I try to cut back. It's an adjustment for the tongue but you have to do what's best for you.

Agnes: **Agnes** is a 43-year-old black female currently employed and receives healthcare insurance through her employer. She is a native of St. Croix. **Agnes** was diagnosed with pre-hypertensive at age 10 and has had a diagnosis of hypertension for 26 years. She now has severe cardiomyopathy due to the disease. **Agnes** has a primary care physician who treats her blood pressure. She currently takes four antihypertensive tablets to control her blood pressure. She admits that she regularly and deliberately eliminates her antihypertensive medications and had omitted her medications just within the week of her interview. She reports regularly using alternative methods not prescribed by her healthcare provider to control her blood pressure. **Agnes** was diagnosed very early with hypertension: she reports not liking having the diagnosis of hypertension. Agnes describes feeling about the diagnosis below:

> Its…. it is so stressful having hypertension because you just want to live you just want to do you. If you have a "don't care" attitude you're just going to do what you want to do. Now if you are taking the steps to try to do better you have to give up so much stuff like you really can't drink if you're a social drinker you have to watch the intake of alcohol. So you go out with your friends and what, I get a club soda because I don't want to have

no alcohol…. Nah… You have to watch your level of activity that you don't overdo it overexert yourself, opposed to stuff like you would normally do on your own if you did not have the disease. You have to…you know, like the elephant in the room is always there. You have to take your meds; you have to follow-up with your doctor. Well, "I don't feel like going to the doctor today"…. "I don't feel like taking the meds today"…. "I feel fine"… but it's although "I feel fine" as a physician you're going to tell me "you have to take it every day"….

Montgomery: **Montgomery** is a 77-year-old retired black male originally from Antigua who has been living on the island of St. Thomas for more than 31 years. He has had hypertension for about 30 years. He has healthcare insurance and he also has a primary care provider who manages his hypertension. He currently takes one tablet daily to treat his blood pressure, which he repudiates eliminating. **Montgomery** denies use of alternative methods to control his high blood pressure. He disclosed that in his experience doctors in the United States Virgin Islands are less likely to give detailed explanations to patients. **Montgomery** commented:

> Well basically, I don't think here in this region doctors go into a lot of details to explain a lot of things. Let me say something. One time… One day while on the job I got a headache and um I said this strange I never have a headache. So I said you know what when I'm go home I will stop and see * Dr….* cause my wife and her father are patients with *Dr….*. So when I asked him he said oh it's just migraine headache. So I said what causes that? I don't recall now what he said but when I ask him another question he said "**Montgomery** if I had to explain everything to you it's better I send you to medical school so that you'll know the answer to everything". So after that I never went back to him again.

Mr. Joseph: **Mr. Joseph** is a 64-year-old black male currently retired due to his illness. Joseph is originally from St. Lucia but migrated to St. Thomas 20 years ago. He was diagnosed with hypertension approximately 20 years ago and takes one tablet to treat his blood pressure. **Mr. Joseph** was also diagnosed recently with end-stage renal failure and as a result is currently receiving hemodialysis three times per week. He reports that he tries to always take his antihypertensive medications and only eliminates it when he forgets. **Mr. Joseph** denies use of alternative methods to control his blood pressure besides what is prescribed by his healthcare practitioner, although he admits that he did use alternative methods prior to being started on hemodialysis. He reports taking his health very seriously after his diagnosis of kidney failure. **Mr. Joseph** reports having a lot of difficulty managing his health because of his inability to work and the lack of health care assistance for him. He describes his interpretation of the healthcare system on the islands as: “Well the health care system here is “versi versa” (meaning not well structured) according to my understanding its preference”.

Joan: **Joan** is a 62-year-old black female originally from St. Lucia who has lived in St. Thomas for 20 years. She is currently employed and has health care insurance through her employer. **Joan** has had the diagnosis of hypertension for approximately 10 years and she has a primary care provider who manages her hypertension. She takes one tablet to control her blood pressure, which she relays that she deliberately eliminates quite often, and had even eliminated her dose in the week prior to her interview. **Joan** disclosed that she uses other methods besides the regimen that was prescribed by her healthcare provider to help control her blood pressure. She communicated on several occasions during her interview that she does not take her blood pressure seriously. Below is a statement Joan made about handling her blood pressure:

> No I don't take it seriously but I know that I am supposed to do what they tell me to do, I know, I know you cannot drink and drink if you have high blood pressure… But in case I am here my mind tell me to take a little drink I take little sip I will take one, because I know if I overdose myself it's not good.

Taylor: Taylor is a 30-year-old black male who was born on the Island of St. Croix but currently lives and works on the Island of St. Thomas. **Taylor** has a bachelor's degree and works as a pharmacy technician among other things. He has had a diagnosis of hypertension for about 8-10 years, he does have healthcare insurance through his employer and he has a primary care physician who manages his hypertension. Taylor currently takes one tablet to control his high blood pressure, which he admits to eliminating from time to time only because he forgets to take it; he denied missing his medication in the week preceding the interview. **Taylor** admits to using other measures to control his hypertension that was not prescribed by his healthcare provider. **Taylor** stated that he has a good understanding of hypertension and gives the following description:

> High blood pressure, what I know or the gist of what I know is that high blood pressure could be…. hereditary and you can also get it from outside elements that could basically be like foods your environment, different things can also like stress and other different things can also bring on pressure. Pressure; there is considered good and bad pressure where depending on how high or low your pressure is cause at one point I believe that you know once you had low pressure you was ok until I now read up and found out that if your pressure becomes too low then (laughs) you are also in the same problem so there is that medium that you have to find. I more got into looking up about pressure when I got it, my mom had it, still has it but, I just always though you know she is a single parent

she struggling with four kids so of course why wouldn't she get pressure you know, but know realizing that it was already in the family and out of well so far that I know of out of her kids I am the only one who got it.

Mary: **Mary** is a 58-year-old black female originally from the island of St. Kitts but has been living on the Island of St. Thomas for morethan 31 years. She is currently employed for wages and has healthcare insurance through her employer. **Mary** has had a diagnosis of hypertension for approximately 27 years and currently takes one tablet to control her blood pressure, which she reports eliminating only when she forgets. She admits to using methods to control her blood pressure that was not prescribed by her healthcare provider. **Mary** disclosed that she has never really had any education on hypertension she stated: “I don't know much, when you have hypertension…when you have high blood pressure you could get in coma, number one, and sometime it can make you dizzy”.

Faith: **Faith** is a 55-year-old black female originally from the Island of Antigua; however, she has been living on the Island of St. Thomas for over 31 years. She is currently employed for wages and obtains healthcare insurance through her employer. She has had the diagnosis of hypertension for approximately 23 years and does have a primary care provider who manages her blood pressure. **Faith** currently takes three tablets to control her blood pressure, which she admitted to deliberately eliminating these frequently, and confessed to eliminating her tablets in the week preceding her interview. **Faith** denies the use of methods not prescribed by her healthcare provider to control her blood pressure. She reported not liking to take medications, but also adamantly indicated that she does not like to use bush medicine either; **Faith** stated, “I want to reach to the stage when I don't have to use the medicine anymore”.

Lisa: **Lisa** is a 50-year-old black female originally from the island of St. Thomas. She is currently employed and has health care insurance through her employer. Lisa has had a diagnosis of hypertension for approximately 9-10 years and currently takes 2 tablets to control her blood pressure. She reported eliminating her medications only when she forgets and also admitted to using other methods not prescribed by her physician to control her blood pressure. **Lisa** asserted that although she has had hypertension for some time, she has very little knowledge on hypertension or its management she declared that her perception of how hypertension is handled in the Virgin Islands is not positive. She perceives the healthcare providers in the territory to be non-caring and concerned sorely with financial gain. **Lisa** affirmed the following as to how she perceives that providers conceptualize the Patients from the United States Virgin Islands:

> It has a lot to do with I guess living in the Caribbean as well, you accustomed to your high starch, different kind of food, you know, your ground provision and stuff, and seeing that we grow up on. So it it's like they say “I'm going to tell you xyz or try to explain to you but, you know, you going do what you want to do”. They're not really…. to me they're not really in it to help you, they're in it to make money, so they keep stuffing you with this pill, this pill. If that don't work try another one. I just recently took it on myself to get an echo and a Holter monitor to check my heart rate and everything like that, and it seems like when you do have high blood pressure eventually it gives diabetes . . . and that's my big thing right now.

Donika: Donika is a 24-year-old black female who was born on the Island of St. Croix, but grew up and currently lives on the island of St. Thomas. She is a nurse and is currently employed for wages. **Donika** was diagnosed with hypertension 3 years ago at age 21 and currently takes three tablets to control her blood pressure. She does have healthcare insurance through her employer

and currently has a primary care physician on the island that manages her blood pressure. **Donika** denies ever eliminating her blood pressure medications and she refutes the use of methods not prescribed by her physician to control her blood pressure. **Donika** is very diligent with her blood pressure management she reported:

> No I don't, I don't. I don't chance it. When I cook, people say, "oh my God I can't eat this", so I am like don't eat it, don't' eat it. I don't cook with high salt. I'm strict because I don't even want to chance it because I don't want to get a stroke . . . I don't want to get a stroke.

Songbird: **Songbird** is a 50-year-old black male who was born on the Island of Dominica but has lived on the Island of St. Thomas for more than 31 years. He is currently employed for wages and has healthcare insurance through his employer. **Song Bird** has been diagnosed with hypertension for the past 11-15 years and was prescribed one tablet to control his blood pressure, which he currently does not take. He admitted to using other methods not prescribed by his healthcare practitioner to control his blood pressure. **Songbird** is very well versed on hypertension and reports the following:

> Well, I know it to be the silent killer. That you go about your business, not knowing what it does to your heart. It can "mash you up" (destroy you) really fast . . . or over a period of time . . . but it's fast to you because you don't know anything what's going on inside. Truth of the matter it seems like black people are just . . . it just mashing up black people in general. I don't know if it's because of our diet or what it is, but it's certainly something that needs to be aware of and be educated about.

The individual participants provided rich data that was analyzed to identify the main categories of ***mistrusting, reacting, educating, socializing*** and ***financing***. These were supported by the sub-categories ***perceived lack of provider caring, perceived lack of cultural sensitivity,***

perceived lack of adequate provider credentialing, perceived inflation of healthcare cost, fear of complications, symptom-based management, denying, relying, owing, defying, dietary influences, use of herbal remedies, strong sense of spirituality, healthy eating, purchasing medications **and** ***long term sustainability*** These led to the substantive theory of ***deciding*. *Deciding*** is delineated as the ultimate process, which articulates the critical factors that influence medication adherence in the hypertensive population from the United States Virgin Islands. Each individual participant was interviewed via face-to-face format. The researcher and a transcriptionist transcribed all interviews verbatim. The researcher reviewed each transcript with the voice recording to ensure accuracy. Individual participants were contacted either via telephone or face-to-face encounter to verify their individual transcriptions. Two of the participants were not reached; therefore, their transcripts were not reviewed with them, however the researcher still felt it pertinent to include the data obtained from these individuals in the study results.

The data was analyzed using the Straus and Corbin data analysis methods of Grounded Theory. Open coding, axial coding and theoretical coding were utilized; these yielded the following five main categories: ***mistrusting, reacting, educating, socializing*** and ***financing***. The data analysis also yielded the following 16 subcategories that helped to articulate and authenticate the main categories formulated substantially: under ***mistrusting****: perceived lack of provider caring, cultural sensitivity and provider credentialing, perceived inflation of healthcare cost*; under the category of ***reacting****: fear of complications and symptom based management;* under ***educating****: denying, relying, owning, defying*; under ***socializing****: dietary influences, use of herbal remedies and strong sense of spirituality* and under ***financing****: healthy eating, purchasing medications and long term sustainability*. These categories and subcategories yielded the

dynamic social process of ***deciding**,* which articulates the critical factors that influence adherence to therapeutic medical management among persons with hypertension from the United States Virgin Islands. The following sections will validate the substance of the categories formulated by reflecting through the voices of the participants.

Emergent Categories

After careful line-by-line analysis of the data using constant comparative techniques and the analytic techniques of Strauss and Corbin's Grounded Theory methods, five categories and multiple subcategories where established. Saturation of the data was reached after the 15th interview; however, six more interviews were conducted to solidify the identified categories and subcategories while assessing for the emergence of new emerging themes that could possibly be categorized. Open coding techniques allowed the researcher open up the data while dichotomizing it in its most infantile form. In this coding stage, emerging categories are grossly labeled. The open coding process identified many themes; these were later linked and amalgamated intricately through axial coding techniques. In the axial coding process the researcher identified similar characteristics and dimensions of the data that afforded the researcher to ascertain a more conjectural elucidation of the findings. This process of dichotomizing and amalgamating yielded the following categories of ***mistrusting, reacting, educating, socializing*** and ***financing,*** and the subcategories ***perceived lack of provider caring, perceived lack of cultural sensitivity, perceived lack of adequate provider credentialing, perceived inflation of healthcare cost, fear of complications, symptom-based management, denying, relying, owing, defying, dietary influences, use of herbal remedies, strong sense of spirituality, healthy eating, purchasing medications*** **and** ***long term sustainability***

Mistrusting

Hall, Dugan, Zheng and Mistra, (2001) and Hall, Camacho, Dugan and Balkrishnan (2002) defined trust as an important attribute of the medical relationship, contributing substantial inherent value to the patient/physician relationship and it is viewed as an important critical aspect of wiliness to seek care and follow recommendations put forth by physician care providers. The act of trusting in the medical arena is therefore the act of believing in the veracity and capability of those providing care. **Mistrusting** is the antonym of trusting, meaning that the inability to gain firm belief in the integrity or competences of the healthcare provider negatively affects care management. Omodei and McLennan (2000, pg. 279) define mistrust as "the inability to relate positively to others". ***Mistrusting*** was represented in the data and was given meaning through the voice of the participants. This concept was perpetuated and relayed through expressions that resonated through the subcategories of ***perceived lack caring, perceiving lack of culturally sensitivity, perceiving lack of adequate provider credentialing and perceived inflation of healthcare cost***. The participant's voices regarding medical mistrusting is represented below.

Jasmine Guy expressed distrust for the healthcare providers in the Virgin Islands. She expressed frustration with not getting information regarding her diagnosis of hypertension and her lack of faith in proposed diagnosis given by healthcare providers on the Islands she shared: "you know, here we have a history of being misdiagnosed so we are not very trusting when they say you have this and you have that I have to do my own research". **Jasmine Guy** went on to give a specific personal experience she had that led her to her perception of lack of confidence in the diagnostic capabilities of the healthcare providers on the Island and to her perception of their lack of caring exhibited by them which, ultimately led to her ***mistrusting*.** Her description of this experience is expressed in her own words below:

> It's um well I can tell you about my episode; I got bit by a spider and for five months I was going to the hospital back and forth with a low-grade fever and when they couldn't figure out what was happening to me because I didn't have the hole that everyone else experienced, they told me I was crazy. So, you know still not feeling well I ended up going to the mainland for treatment and you know something was wrong with me. I spent my time up there, came back here and I went to the doctor with all my paperwork and I explained to them well okay this is what I went through and when people come here and say they don't feel right because people know their own bodies you all need to be a little more vigilant and a little more caring. I was told, "Well at least you find out what wrong with you" and dismissed that way. So, it's like if it's not the norm, you know you are dismissed. They don't know what's wrong with you they don't go the extra step to find out what's wrong with you. And that happened with me, and with other people I know. You don't get…. you don't feel cared about.

Valerie expressed a lack of faith in the healthcare system in the Virgin Islands. Her reasoning stemmed through a perceived lack of caring and responsiveness on the part of the healthcare team; she also expressed a perception of personal advancement and perceived greed on the part of the healthcare provider that allows them to attend less carefully to the needs of the patient but willingly. Her experience has led her to seek medical care on the mainland rather than in the Virgin Islands where she lives. **Valerie** explained her reasons for ***mistrusting*** below:

> It seems as if the private physicians… I don't know if it's greed or what…. They don't… to me they are not as caring as they should be and the hospital, that's a mess. Umm to me it's like they don't care at all and that's a shame because this is where we live and this is where we need to get care…. I had a situation in 2011 and that really doesn't have to do

> with the high blood pressure but I had to the states because you can’t get back you information they are not… sigh… it’s like they don't care. That's why I don't have my mammograms and stuff here on the Island.

John in his interview also expressed perceived lack of caring on the part of the physicians on the Islands as a factor that fuels his ***mistrusting***:

> Oh man, how to put it . . . like I say, the States is usually more equipped because the doctor I go to . . .well the one I go to here they do the blood work and all that stuff, everything done in house and stuff like that, but it's just like the type of help you could get, I think you do get more in the States than here. Because here . . . I think that some of the doctors here I don't think they don't know all, they just don't care, but sometimes that just the way they come across. It's like they don't want be bothered, you know, stuff like that. Maybe they don’t get pay and they just don't care.

Lisa’s ***mistrusting*** also stemmed from her perceptions of the lack of caring from medical practitioners on the Island. She expressed her story below:

> The Department of Labor pays for my medication and my doctor visits, and because it keep happening (meaning her blood pressure being elevated) they can't find something to control it, so therefore they send me from doctor to doctor to doctors to let somebody say okay well it's fine or whatever the case is and in that it doesn't become personal. The doctors really don't care. Okay, they send me here, da, da, da, look at it, you take that, let's check your pressure or whatever the case is and then you know you find you doing good today, tomorrow is not so good. So, they don't really care. You're a number. I don't think if I was seeing them personally that they would care, you still a number.

Mary Joseph also gave an account of her experience that lead her to ***mistrusting***. She gives an account where she felt that her needs were not met due to lack of care and compassion on the part of the healthcare team. **Mary Joseph** stated:

> St. Croix, St. Thomas. I would say the entire Virgin Islands. Yes I would say that because everybody is talking about it. Where the help the patient are getting . . . you are sick, that's why you go to the emergency, so why go to get help and then they giving people to go to medication . . . where can I go and buy the medication? It's late in the night, 10 o'clock in the night. Why not giving me the medication and then . . . okay that will keep you through the night and tomorrow. No they give you . . . write a prescription for you and then tomorrow you going to buy this medication and you will not get no medication until then. It's very poor; it's very, very poor. When I broke my hand the last day in October, I went to the emergency and I tell you I had pain . . . this was . . . it broke here, there and across again (Pointing out the areas on her arm that were affected). So this part of my thumb was way up like that and I had to wait and wait and they send me for x-ray. They said . . . . …oh I don't think it's bad, I don't think it's broken “you're not a doctor” I stated. You know I had to stay three, four days with my broken hand before I could see a doctor? They sent me home and tell me Monday go and see such and such a doctor. Then when I went to him he tell me . . . oh wait another two days again for surgeon. My husband got upset cause he said. . You have somebody in pain for broken hand, so . . . . and its four month now and I cannot close my hand, I cannot close it.

Songbird expressed his concerns with lack of appropriate diagnosing among healthcare providers leading to his ***mistrusting***. He disclosed:

> Aam… it definitely has issues in general. My wife work with this lady and she always . . . she was always complaining of stomach pains. You know the island people, oh; "you have gas man". She goes to doctor and everybody doing stuff and can't find anything wrong with her. So much, she got up and she went to the States, and the woman had full-blown cancer! In six months she was dead! And they did the same tests here that they did up there and for some reason they couldn't see, they couldn't read it. So when you look at stories like that . . . which there are quite a few of them . . . you can see that there is an issue, and a lot of people leave and go to Cleveland Clinic right now in Fort Lauderdale, a lot of people. First of all, it's cheap! Dirt-cheap! My wife and me we went there!

Blossom reports that she has been traveling to the states for a number of years to see a doctor there she reports that she will be moving to the states soon, "Yes, yes. And another thing why I'm moving is because of my health and my husband also is a diabetic, so I think we will get better healthcare".

Another concern expressed by the participants that lead to their ***mistrusting*** is the perceived lack of competence of healthcare practitioners and lack of adequate credentialing of health care providers on the Islands. Some expressed concerns that healthcare providers who are no longer eligible to practice medicine in the states come to the Islands, which are American territories and practice without proper credentials. Many of the participants expressed suspicion of some of the healthcare providers because of past experiences in the territories where someone discovered that an individual practitioner was practicing on the islands with documentation that were not authentic. There were also concerns of healthcare providers practicing on the islands who had previously been in malpractice trouble on the mainland and could no longer find work

there. **Mary Josep**h reported lack of trust due to perceptions of inadequate credentialing, she expressed:

> They have doctors here…. they have . . . they can't do their work. Let me tell you, there's a lot of people that coming down to St. Croix and I don't where they come from but I heard that, some of them they buying this piece of paper and coming down here and said that they are doctors and then they are experimenting on you. Yes..Yup!

She went on to give an example of an experience she had that showed lack of competence on the part of the physician she stated:

> I had…. many years back, I had a hernia and I went to a doctor he had just came from the States . . . but from the time I saw the man my mind tell me mm mm, but my other doctor said . . . go ahead, he's okay, and this man you know what he left inside of me, something like a syringe inside my bladder. Every time I go on the track to walk, when I come back to take my shower I will bleed. I said but what happen. Go back to the doctor, they did all kinds of things; take my urine, and nothing. Then finally I went to Puerto Rico. When they put the camera inside of me what did the doctor saw, something like a syringe inside any bladder. Apparently, whatever he did to my hernia, he just pushed in this thing inside my bladder to hold it down. They had to reach in and cut it out. And I had two other operations, because . . . he didn't do a good job. He didn't know what he was doing. I had to go to Cleveland Clinic two years back and had major surgery because this thing was killing me, so they had to put . . . they had to take my own tissue and then reimburse it with . . . reinforce it, I'm sorry, with the mesh. It's very bad down here…Very bad.

Filbert echoed similar sentiments in regards to perceived lack of adequate credentialing leading to his mistrusting of some healthcare providers on the island:

> Like when people get sick especially they don't really…they tell you that you sick…. but a lot of people does not find that they really sick until when they go to Puerto Rico… then they find out how bad they are because, some of these fellows, a lot of these doctors been coming here and doing work without license.. They have couple of them here without license.

Taylor also expressed ***mistrusting*** as he discussed his perception of physicians who get into medical malpractice trouble on the Mainland and then move to the United States to get away from that trouble and then they are allowed to practice in the United States Virgin Islands without adequate credentialing because they are not carefully screened and these factors are not picked up. He discussed the incidence of providers with inadequate credentialing as he explained his experiences with this below:

> The reality is…. I don't know if you have ever been to a hair salon or hair dresser here, I have been to them with several ladies and you go in to one of them, even to a barber shop, you go into them and you would have ten people working but you would look up on the wall and you see only one certificate, one diploma or one degree or one whatever but you have 10 people working. Ok so how is 10 people working on one credential? And that's how this is, the system is, yeah, that's one operation I wouldn't call name but I have known of doctors who have had mal practice suits against them in the States, but where are they? Right here…. are they working? Yes they are.

Some participants expressed ***mistrusting*** in the United States Virgin Islands healthcare system due to the perception inflation of healthcare cost overall. Some participants verbalized their perception of discrepancies with healthcare bills on the Virgin Islands. **Songbird** compared his medical billing for services performed on the mainland to that of services offered in the

Virgin Islands. He discussed his experience with this and why he chooses to get his check up at Cleveland Clinic in the states rather that in the United Sates Virgin Islands where he lives. His explanation is below:

> First of all, it's cheap, dirt-cheap! My wife and me we went there. We did every test in the book, right. We have Cigna, so we started getting the bills from Cigna . . . well from the company first… and let's say an x-ray cost $100 and Cigna pays $25 . . . there's a line on that says Cleveland Clinic discount. They would discount additional $40. Your bill, $20 okay… So my wife and me did all the checkups that they said and you know we paid something like 200 and something dollars balance after insurance. You come here; you do an MRI, okay. MRI is like, I don't know, something ridiculous like $800, something like that. Cigna pays 350/400. You still left with 400/450. One MRI. Hence . . .

Taylor also commented on perceived unfair healthcare billing as a fueling factor for his mistrust, he stated:

> It's like education I don't believe that we are doing 100% everything that we are supposed to be doing but you are working in it you try not to 100% boisterous about your complaints either, so yeah I do believe that they are some issues within the healthcare profession, uumm the sad reality is that we are uumm…. we are in a capitalistic society and as much as you want to talk about monopoly, monopoly happening every single day and the reality is in medicine that's the new cash crop you can go from the distributor, to the wholesaler to the realtor, you could go to the manufacturer, you can go in the hospital I don't care which one you want to say is the worst they all trail back in the same line its all dots to be connected at the end of the day and the reality is its happen down here where is something that I have heard more than once where a Dr. would treat you and

> charge you.. We talking about people with insurance, and charge you and charge your insurance and then you will get your statement and sometimes some weeks later you get another statement for a bill of nothing new because you have not gone back to your doctor but there it is they are putting in something oh we forgot. If I owe you $10 you know I owe you $10 you are not going to forget and then when I give you $9 you like oh yeah is $10. So I am saying if you do an operation of that magnitude that is so much hundreds we are not talking about no $10 dollars we talking about 100s it's no way! And then your premium going up, you now having to pay more you still getting the same pay, hell we actually getting less pay you know and it bothers a lot of people because you are trying to decide who you can trust and that's why a lot of times a lot of patients don't like to ask those questions to the doctors because the trust isn't there.

Agnes referred to the healthcare system in the Virgin Islands as broken; this perception of fragmentation and inadequacy led to her ***mistrusting***, as she stated:

> Oh yeah! We have a broken system here like I said you have where people have had family members either go to a physician and the doctor said they were okay for them to go to the hospital for one thing and had something else happen and they not recover from that. So it is a broken system here. And then you have those that went away it was so eye opening. Like if you to the doctor here you have to wait a week or two weeks to get your results, for x-ray, for MRI. When I go to the States I come that day, I do my labs, I do whatever tests they ask and but the time I go upstairs to meet the doctor he have everything there. So I don't have that "am I sick?" "Am I dying?" I know what I'm going to be faced with right then and there. We need to get that here. It's not everybody has that

financial resources to make a trip, to go away. So here needs to be the best we could do. So those are the issues that we have.

Mistrusting was represented throughout the data collected from participants in this study. The researcher connected mistrust through the subcategories, ***perceived lack of provider caring, perceived lack of cultural sensitivity perceived lack of adequate provider credentialing,*** **and** ***perceived inflation of healthcare cost*****.** The voices of the participants comprised this category and justified the subcategories revealed. The voices of the participants was conceptualized and theorized to insightfully induce this ***mistrusting*** category, which gives conjectural definition to their declarations.

Reacting

The category ***reacting*** identified in this study speaks to the act of responsive rather that preventative care. Wong (2015, pg. 1) speaks to the phenomenon of reactive care as "presenting to emergency department or clinic for an acute problem such as a heart attack or stroke". Wong (2015) goes on to classify reactive care as "when chronic conditions have deteriorated to the point that you can no longer manage at home" (Wong, 2015, pg. 1). The antithetical is proactive care; this is identified as taking necessary steps to prevent complications. Wong (2015) advocates proactive measures such as healthy eating, exercise, emotional wellbeing and monitoring in the presence of chronic diseases. ***Reacting*** is the response to a stimulus, whether negative or positive. ***Reacting*** in healthcare is the process of responding to complications of ailments rather than preventing these. The data spoke to the process of reactive care among the participants. The category ***reacting*** was buoyed by the subcategories ***fear of complications***, and ***symptom based management***. The participants' voices as they echoed the category of ***reacting*** was reflected in the narratives provided below.

Taylor indicated that there are days when his life is so consumed with his day-to-day responsibilities that he doesn't think about his blood pressure and therefore does not remember to take his blood pressure medications. He described what prompts him to take his medicine below:

> There are like good days and bad days where. …It's like wow you really need to take it, you feel like totally overwhelmed… where like for me personally I can tell when my pressure is reaching to a limit where its beyond me…the headaches…eye, eye pain twitching in the eye…sometimes to the temple…. you know it gets real…real tense and…those are the moments when I know definitely even if I was forgetting for the day and that happens sometimes that's like an automatic trigger… yes you need to take your medicine.

Songbird reported that he does not take his blood pressure reading often, but states that he is prompted to take it based on his symptoms, he recanted:

> Last time . . . last measurements I did, it was just a little bit over, not anything ridiculous, but I haven't let's say for the two months or so I haven't checked it all. But I am a good indicator of my pressure. I know when my pressure is high. I get tense and my shoulders get tense and I get a little lightheaded . . . not lightheaded but I just could feel like a pressure in my head sometimes. So I know and then I would check it and I say oh yes it's high.

Mr. Indian reported he does not take his antihypertensive medications because he knows that he can handle his blood pressure. He reportedly implements measures to control his blood pressure when he is presented with symptoms. **Mr. Indian** mentioned:

> Well the body tells me when the pressure is going up so I know which foods or what to eat or what counter acts what... so if I do a Mac Donald's today right then its 8 prunes tonight with some greens.. That would eliminate it through the body the tea that I would drink would be nettle tea to help to clean the bladder of the salts that has accumulated and the liver will be helped to clean out as well from the amount of sodium that's going in through the liver itself….so it would clean it so that tomorrow morning when I am up… it might not have it…so by 0930 -1000 tomorrow morning I ready to go.

During the data-collection interviews, many of the participants expressed that they took their medications not because they had a chronic illness and this was the way to treat it, but because they did not want to have complications from hypertension. **Candy Daniel** reported that having hypertension is very inconvenient, but that she changed her lifestyle because she feared getting the complications of hypertension that her mom has. She detailed:

> I don't want to be like my mom, so I made the decision that I was not going to be my mom… I am going to be Candy... I am going to have a longer life... not a life of meds and doctor visits and dialysis and all that other stuff and so diabetes works with high blood pressure and every other disease there and so I don't want to be my mom… So I made a conscious decision of changing what I eat and made it a household change… I went from white pasta to wheat pasta…I just changed the way that I live basically.

Jasmine Guy also reported:

> In my mind I didn't have high blood pressure. I felt fine. Except for the headaches I felt fine. So I didn't think you know I guess high blood pressure suddenly had an age attached to it and I didn't feel like I met those requirements. It took me a while to actually admit to myself that I had high blood pressure. Yes. It took me about two months for me,

> I got the prescription, I had it at home and it took me about two months to actually say well I need to take this medication. In the beginning I would skip about two or three days a week and then umm you know as I realized that this was a serious issue, people around me were suffering from strokes and stuff like that… I started taking it consistently.

Joan reported that she does not take her blood pressure medications when she is at home unless she gets dizzy or has an indication that her blood pressure is elevated. She states:

> When I am home I tell myself that maybe if I get dizzy or something I will run and take it but when I am going to work I make sure that I take everything my vitamins, my everything but when I am home I just don't take it.

Faith implies that she does not like taking her medications because she does not want to get hooked on medication, but reports that she makes sure to take the medication if she experiences symptoms. She states: “If don’t feel good . . . I don't feel good I am like wow I got to take my medications”.

Most participants indicated that they changed their diet and implement exercise after their diagnosis of hypertension even though they indicated that they thought that hypertension was hereditary. Many participants discussed the cultural influence of food on the Islands, which they all attribute to the increased incidence of hypertension but still admitted to consuming these types of foods until their diagnosis. **Valarie** stated:

> I don't like it that I have it (referring to hypertension) but it’s… I try… I don't cook with a lot of salt anymore, because salt is my favorite… I don't, I do not like sugar that much so when I used to make cereal instead of putting sugar I put a little salt, that's what I liked I have given it up not entirely the salt, and I don't cook with a lot of salt anymore and if I eat somebody else’s food I feel like I can taste the salt really high…I try but I don't like

having it but I am dealing with it the best and I take the medication because…I was told that if I did not take the medication the pressure may go up for whatever reason and I could get a stroke and I would not like to have a stroke..

John talked about the changes he made after his diagnosis, he stated:

I just think, you know, it's like . . . I say like deny. Because the first lady told me . . . hey, you know, "go to your private physician because your pressure was high". …I was like hey stress at work, you know, and I just let it go. But as I say, I never had any symptoms; I never had no headache, no dizziness, nothing. I was just living day to day until when I went there, you know, then that's when she said . . . okay we have to deal with this . . . she said your blood pressure is high. Usually you should have a stroke already because she say "you could have died" but fortunately, like I said, I didn't… so I end up good . . .since I come out like I said, you know, I try to manage it the best I could. Yeah, yeah, I will not lie to you I exercise a lot more. Diet . . . like I said I didn't change too much about my diet because like I said my diet wasn't really too bad, but most . . . I cut out . . . I think my biggest change in my diet was like basically stop use salt, I guess

Jasmine Guy reported a culture of poor dietary habits: she had this to say:

I guess when you're young you feel invincible about things. You know when you're young you shouldn't have cancer, you shouldn't have diabetes but nobody is immune to anything these days. So it's what you call it? No discrimination. It attacks everybody. I think that a lot of people are now starting to believe that, you know, they're not invincible anymore. Because people in their 20s…. I know people in their 20s when I was in the pharmacy and I'm seeing people way younger than I was coming in for a high blood pressure medication, diabetes medication. And I'm like what the hell? You know but it is

> what it is. People have ailments you know we don't teach our kids to take care of themselves. So you know they don't learn good habits. There are no vegetables on the plate. You know we don't eat fruits. We need to pack chips, and Cheetos and cookies for snack instead of an apple. So I think me being diagnosed with high blood pressure was a good thing in the sense that I can try to pass on some good habits to my daughter.

The participants spoke to a reactive type of care to control their blood pressure; most reported instituting diet and exercise regimen after they were diagnosed with the disease. ***Reacting*** is stimulus-driven. Essentially, the participants analyzed this to mean, "I have this disease so I am going to change the way I live or I have these symptoms now I have to take my medication or now I have to monitor my blood pressure." **Agnes** voiced lack of PCPs on the Island as a factor, while **Jasmine Guy** suggested lack of acceptance of high blood pressure as a serious disease. Most participants suggested a hereditary predisposition to hypertension, but made no comments or attention to instituting preventative care initiatives beforehand. Most astounding is **Agnes's** story of her diagnosis. She had early identification of the disease, but lack of education, preventive care and follow-up, which resulted in her having serious complications from the disease. **Agnes** disclosed:

> Um age ten I went for a physical. I had borderline hypertension. Um the physician then told my mom it's hereditary. Cause my mom has pressure, my grandmother, my father, his parents. Um because it's ten, my mother was supposed to manage my weight and the amount of salt that I take. We did that. Um didn't really follow up much after that to the doctor. At 17 I got pregnant with my daughter and from the onset of the pregnancy I had hypertension, which led to preeclampsia so um rough pregnancy. Had her early C-section. And from then at 18 cause I delivered her when I was 18 been on medication.

> From since then and it has I think at that point that's when I learned that hypertension had stage one, two, three. I was a three. I have always maintained being a stage three. Because I think, 1.is like you've heard it, it is very rare for a child to have pressure. Um so it's like okay and I was a heavyset child. I had this, as a child so it was more lose weight you will get better. Did not follow up. And of course my mom didn't know anything either. I mean she just know when she cook she cooking and I eating. It's not that she understand that to cut back until when it impacted her. And by the time it impacted her she could stop cooking with salt and at that stage I done grown.

> I want salt in my diet so I still was unaware of the damage that I was doing and I was not maintaining taking my medications when they put me on them either. Because I was like I'm not popping out all these pills. Salt intake yes. Lack of water, yes, because I'm not a water drinker either. So there is nothing to flush. It's going to stay in their cause it's not like I'm drinking water to help push it out. Exercise; I don't exercise. So all the factors that make a problem we do it. So that would be an issue and we really don't follow up with a healthcare provider until something severe happens. And at that point that's when the doctor is going to say you have high blood pressure, you have diabetes, and you need to do this you need to do that. And that's a lot to tell somebody that doesn't have a relationship with a doctor to start to have a relationship…Nah.

The participants' voices spoke to reacting to their blood pressure symptoms as stimulus to institute measures to control it. Proactive measures were not instituted in most instances. Although many of the participants expressed a correlation with their hypertension and heredity they spoke of no measures instituted prior to diagnosis to prevent the disease. The category

reacting was emanated through the sub-categories ***fear of complications*** and ***symptom-based management***. The researcher conceptualized the voices of the participants and theorized these congruently to induce the reacting category, which gives meaning and substance to the participants' disclosures.

Educating

To educate is to decree direction that aims at developing all aspects of human maintenance, whether it be mental, physical, emotional, social or moral. The path to education is life-long. ***Educating*** is action verb of educate. In the healthcare arena ***educating*** has been keyed as an important aspect of adherence. Healthcare literacy is the term in healthcare that speaks to instruction given by healthcare professionals to patients so that they can be in optimum health. The National Institute of Health defines healthcare literacy as "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions". Healthcare literacy is viewed as an important aspect of health care and as a necessary component of successful care outcomes. The participants talked about health care education. From the data ***educating*** was a core category that emerged from all participants in the study. The participants shared their experiences with receiving education from their health care providers and other sources about their diagnosis and management of hypertension; the themes ***denying*, *relying, owing***, and ***defying*** all emerged as subcategories to ***educating*** and helped the researcher to identify the dimensions of this category for this study. The term "***educating***" is conceptualized in this study to embrace all aspects of health care education. The theoretical description of the term embodies all dimensions of health care literacy as defined by the national institute of health. Below are some descriptions embodied in the category of ***educating*** that were provided by the participants?

Many of the participants reported not getting any information on hypertension, its effects and the best ways to manage it from their healthcare provider at diagnosis. This indicates a significant deficiency in health literacy among this population. **Faith** reported that at diagnosis "they told me the pressure was high and they start giving me medication during the pregnancy and then I never stopped taking it from then". **Jasmine Guy** also stated that she got no information from her healthcare provider regarding hypertension or its management at diagnosis. She stated: "I had to research on my own, no information was offered to me". **Jane** is another participant who stated that she did not get any information about hypertension from her healthcare provider. She stated: "They say you have high blood pressure... You have to take this medication to help bring it down and that I have to come back at such and such a time and that's it". **Lisa** admitted that she did not have much knowledge of hypertension; although she was diagnosed 10 years ago, she recounted "Even though I had it for about 9-10 years, I don't know much, because the doctors here all they do is full you with medication and they give you a little pamphlet; you really have to do all the research yourself". **Montgomery** also reported not receiving any information at diagnosis about his hypertension or treatment. He went on to explain that with his visits to his physician over the years he still does not get much information on health care issues. **Montgomery** perceives that there is a discrepancy between the information White patients receives from health care providers on the Islands and the information black patients receive. He stated:

> You know basically that is how a lot of the doctors here or maybe in the Caribbean for that matter um treat patients. Now when a White person goes to a doctor they give them all the information in details and blah…. blah…. blah…. blah. But when a black person go in they just say here take three of these two times a day or whatever…. whatever.

Joan reported that she got little to no information on her medications and stated:

> They tell you that you would get dizzy or something like that because when I go to the doctor they ask me if I take my medications for today, if I tell them no they will ask me why I say, especially the water pills when I have to travel I don't like to drink them too much because the urine I don't like to. They tell me I have to take it every day but they never explain for me and tell me what it does.

The subcategory of ***relying*** emerged when hearing about barriers to education from many participants. These participants stated that patients in the United States Virgin Islands do not gain information about their diagnosis because they do not ask questions of physicians. This stems from the identified perception of the patient as a passive participant in the physician/patient encounter and the conception of the health care practitioner as the expert whose educational preparation is such that they know and apply best treatment practices in each patient encounter. The patients are ***relying*** on the healthcare practitioners to exercise good judgment and institute astute care that serves their best interest at all times. **John** confirmed the existence of this type of behavior when she stated:

> You got to ask questions. Some people here go to the doctor and they don't ask no questions. If I going take something I want to know . . . it’s my body, I'm gonna ask questions . . . but when I was in the States now, my doctor she told that she sit down and she said . . . hey, you know, we gotta do this, you gotta do that and you know stuff like that, but like I say, in the States now the healthcare is a lot better than here, you know, and up there I used to go a private physician too, so . . It is a little difference there.

Taylor contributed to the notion of patients relying on the doctor and not asking questions about diagnosis or treatment. He had this to say:

Because working at the pharmacy as well I understand that a lot of patients have this misconception that when they go to the Dr. you pay him all this money you sit down you shut up you hear everything and anything you get a paper you say good bye and you never ask a question. Have you asked the doctor? And why don't you ask the doctor? These are the types of things well I ask them do you ask your doctor. Do you ask you pharmacist you know, not saying that the pharmacist can’t answer you but the same how that's consultation and if they don't have time for consultation they may not give you that answer either and at the end of the day your doctor always know more as a pharmacist. You know the drug, and you know what the drug is used for and you know that there are multiple reasons. You could come in let’s say for an antibiotic and ask me why am I taking this antibiotic and ask me, it could be for several different reasons you could have had a Staph infection you could had a cut, I mean you could have had the common cold and been taking the antibiotic so for me to be really giving you in detail while you in particular is taking that antibiotic. So for me working there so long, I have reached to a point with any doctor I am paying I mean even though I have insurance when my premiums go up its because whatever you are billing them still, so I still feel like I am taking that money out of my pocket you need to be able to give me a full answer.
Same how if I go for a haircut if I go down the road to buy clothes, it doesn't matter what I do, If I am coming for your service to my car mechanic you need to be able to give me everything because I am paying for that service you know.

A lot of people think that the doctor is…they have doctors on a higher pedestal, for whatever reason you know and the sad reality is that half the doctors are not even from

> here a lot of doctors come in from the states, not saying nothing wrong with doctors, but a lot of times what ever happened up there and they had to trickle themselves away from it and they reach down here but we are still United States so you can still practice within the United states boundaries and Ok but the reality is that there is certain things that you can get away with down here that you won't get away with in the States, you understand? So a lot of the time patients will never go as far and say why, why do I need to? And we are in there trying to give you these answers in a pharmacy setting then and it's like they are getting disgruntle about it but, I am like you wouldn't have gotten that way if your doctor had given you this answer. They are just going to tell you my doctor never told me anything but if you ever say, did you ask? The doctor will go as far as they think they need to. The thing is a lot of the time they (referring to US Virgin Islanders) don't understand the doctors…

Some of the participants themselves admitted that they do not ask questions of the doctor. **Faith** indicated that she goes to the doctor for her refills; gets checked, gets her prescription and leaves without ever asking a question of her doctor. She is ***relying*** on the doctor to treat her appropriately. **Faith** stated: "Most of the time I go to the doctor, it's the same day I go for prescription, you need more refill, whatever, whatever and I do my mammogram once a year, I don't ask questions, I guess I need to ask more questions". **Joan** gave an example of when she went to see her doctor who told her blood pressure was elevated. **Joan** reported that he put her on a new tablet, but during the interview she admitted that she did not know what the new tablet was for exactly and how it would work on her body. She never asked her physician any question about it. She admitted: "I don't ask question like that, my mind tell me maybe to bring it…. the blood pressure down but I don't ask".

Some of the participants continued this trend maintaining that they do not ask the physician for information when he/she gives instructions. They communicated that they basically just take the prescriptions on recommendation at face value, ***relying*** on the knowledge of the healthcare provider to make sure that he/she will give them something that will work well for their illnesses. **Montgomery** stated "For the most part if you go to a doctor and you've been a patient for a long time whatever he tells you more or less take it for granted. This is it".

Owning was another subcategory that emerged under the core category ***educating*.** Several of the participants stated that although they did not receive healthcare information about hypertension from their healthcare provider they went out and investigated the disease and its management on their own. There were also participants who voiced receiving some information about management of their illness that they could implement, and thus saw changes in their disease. ***Owing*** in this study is exemplified when the initiative is taken on behalf of the patient to gain education to help improve their illness or utilize provided information to curtail deleterious effects of the illness. **Lisa** explained that she got very little information about diagnosis, effects or treatment from her healthcare provider, but that she did research this on her own. She stated, "You get that on the little pamphlet when you get your medication that tells you, you know, basically side effects and different stuff like that but as far as your physician they don't really care". **Faith** also reported reading the packet that came with her prescription to gain knowledge about her medications. She stated: "I just have to read the paper when I get it with the prescription". **Myrtle Henry** explained that she gained knowledge about her medication the same way, stating "they don't really explain to me…I get the thing from the drug store so I does read it and see what it says". **Jasmine Guy** also took initiatives to learn about anti-hypertensive

medications. She stated, “I did that research on my own too because that was my field, pharmacy”.

Blossom reported having an abnormal heartbeat; she wanted to understand why she had it and what it was. She was sent to a specialist on the island who offered her no explanation. The lack of provider communication about her diagnosis prompted her to go to the States where she got a good explanation of the cause for her abnormal heartbeat. She stated:

> I'll just say . . . as I said, I have an abnormal heart and it is through my primary doctor when I took the EKG . . . he said I have an abnormal heart. So I wanted to know further about it. I travel to the States every year and I found out that it was . . . he really was taking . . . sending me to Dr._____here, but Dr. ______never actually sat with me and tell me well this is what is happening, this is what you have, he never did until when I went to the States they put me in the machine and then I was told how the blood circulates and what causes . . . my abnormal heart.

Some participants showed ***owing*** through the incorporation of non-pharmaceutical regimens to their blood pressure regimen without the knowledge of their healthcare provider. **Candy Daniel** reported researching herbal remedies for her blood pressure control. She disclosed:

> I tend to look up herbals and what I can use as in apple cider vinegar tends for you to urinate a lot, which draws sodium out of your body, which then drops your blood pressure. That helps and I try that and so look for other means of controlling my blood pressure that way so herbalist way.

Valerie also reported using garlic to help with controlling her blood pressure. When asked how she knows about the properties of garlic in controlling her blood pressure she stated:

> I read it in a book … It helps to bring it down because I have had sometimes when it's been high in the past I have…. I cut up the garlic… chop it up and drink it and when I check it you know in about 1 hour or so it goes down.

Mr. Indian reported researching the medicinal properties of plants, he stated:

> Green tea help you lose weight, the ginger keeps the pressure low, Garlic keeps the pressure but you can't mix it with the ginger too much cause it make the pressure too low…so if you doing ginger and garlic, you can't do that every day… Like you can't do the ginger every day… so you use a little bit of ginger and you use some cinnamon … ginger and you use cinnamon and nutmeg.

Agnes reports that she personally does not like taking medications every day, so she reports substituting non-pharmaceutical preparations in place of the medications to control her blood pressure from time to time. She stated:

> I use garlic and parsley. You dry it. Eat it. Squeeze a lime or lemon in the water, warm water to bring now the pressure. The *nuni* bush. I have used *moringa* bush. I have used it. Like I said again its back culture and it's back to your elders that before all this medication this is what they use and so they believe in it. So it's only because I am stepping into healthcare and trainings where I learn you can't do both because some of the medications have that same ingredient and so you're over medicated. So if I have reached a point where if I don't want take the pill I'm tired I will boil some garlic and parsley and drink that and not take the meds that day.

Songbird reported non-adherence with taking his blood pressure medications but indicates that he tries to self-manage his illness. He communicates that part of his management includes stress-reduction. **Songbird** stated:

> Well I tighten up on my stuff and stress is a factor for me as well. I try my best to reduce as much stress as possible at work. What I can control I do and the rest of it I just try to develop . . . I won't say a "don't care" attitude but just try to say . . . okay "oh well". One of my philosophies in life is "oh well". If I can't do anything about it "oh well". So I try to develop a more easy temperament . . . I'm usually very easygoing but I could at times have stuff in my head worrying about but I could say . . . I relate to something that is kind of joyous, so in a sense I kind of like exude my name in most cases but sometimes it turn and I tend not to worry about stuff, so I tend to let that kind of stuff go . . . you know.

Some participants conveyed receiving information about diet and exercise from their physicians as good strategies to improving their blood pressure and reports have implemented these measures in their routine to assist with their blood pressure management. **Mary Joseph** expressed that she has a good relationship with her primary care physician on the island. She reported that he gave her information on how to manage her diet and the importance of exercise **Mary Joseph** stated: "He is encouraging to keep walking and please be careful walking . . . look at what I eat. Yeah. Salt especially. Too much of the salt is not good". She exemplifies ***owning*** by implementing the measures recommended by her physician and reads up on hypertension so that she can manage her disease better, as she disclosed:

> I cook with less salt. I buy the sea salt and it's not as salty as the regular salt. Sometimes I put some and like the food has no salt, even my sister said it . . . like it don't have no salt and I still have to put a little bit. But we try to use very little salt. I love to read, especially when you go to doctor and they giving you pamphlets on different, different sickness and so on. I love to find out about how to help myself with the diseases, you know.

Candy Daniel disclosed that after her diagnosis, her doctor told her about lifestyle changes that she had to make. She reports seeing improvement in her health after having implemented these changes. **Candy Daniel** personified ***owning*** in this way:

> He told me very direct…. because I was 30 lbs over weight, I... My eating habit was poor … I ate everything and anything fast food and so umm he said you need to… and my cholesterol was through the roof, so… he said "you need to lose some weight, exercise, watch what you eat, look at your labels, eat more greens and proteins and so I decided to join the gym and loose the weight, start eating healthier and I did and in 3 months I was able to drop my cholesterol from 246 to 177 I exercised loss 20 lbs and changed my whole life style in the house, everything…

Mr. Albert Cadet also mentioned receiving good advice from his doctor about management for his hypertension that he has implemented and sees good result with his blood pressure management. He stated:

> Well, the first doctor I met, he didn't explain anything. But the second doctor, Dr. ______, he explained to me what it is, you know, and he told me . . . he's the one that really explained what it is to me. Since then, he told me try and take a medication, stay away from alcohol. He tell me I can drink alcohol but it has to be very mild, I have to watch the percentage and take a 25 or whatsoever, but don't go above 50, 60, you know all these things, so . . . I'm not a drinker so I don't bother myself with that, that doesn't bother me as such.

On the other end of the spectrum, participants reported ***defying*** instructions to take medications or alter their lifestyle even though they were instructed that they needed to implement these in order to control their blood pressure. ***Defying*** is another subcategory that

emerged under the core category of education. The defiant behavior exhibited by some of the participants does not seem to be rooted in the participants not knowing the purpose or goals of the treatment regimen, but more in their mistrust and skepticism regarding the benefits of consuming medications on long-term basis. Their perceptions stem from a lack of complete understanding of the medications themselves and the desire to exhibit control over the oppressive boundaries they associate with usage of Western forms of disease management. **Agnes** readily disclosed that the amount of medications she takes, the side-effects she knows are associated with them prompts her not to want to take her medications even though she was instructed that she must take the medications to manage her blood pressure. She opts to stop taking them for days at a time, ***defying*** the instructions given by her healthcare provider. **Agnes** explained:

> Do we really need to take all those pills? Because I say that if I go to the States and I go to the doctor and I go with my list it's like "A doctor gave you all of this stuff." It doesn't sit well to hear that. Coming from here… you thinking okay we have the crème de la crème and then you hear a doctor there say but you don't need to take this or we don't use that anymore. So it's hard you know? So for me taking 14 pills and some of those 14 pills I have to take twice a day, that's hard; to tell somebody to do that and then still I read the paper that say: blurred vision, sweats, upset stomach. All these things how do you expect somebody to stay on that? To know that when to fix one thing I'm creating so much other and then I guess for me it's because I am in healthcare and I know I'm not supposed to stay on a medicine for so long. I may drive myself crazy because I tell myself ok I am on this pill here for the past 5 years, so on my own I take myself off.

Mr. Indian also reported taking himself off of his blood pressure medications, taking them only when he thinks that he needs to. He indicates not wanting to take medications for an extended

period because of his perception of the toxic effects that these medications may have on the body. **Mr. Indian** also expresses distrust with Western culture and his perception of the oppressive stance of Western prescribing practices. He readily engages in ***defying*** behavior as it pertains to consuming medications on a long-term basis and implements management based on his own terms. **Mr. Indian** revealed:

> I do take them (referring to his medications) but not for the time they say to take it; I take it and after I done reach a level all I doing is poisoning myself. After I solve the problem why do I continue to take that after I already solve the problem? I don't intend to be stuck on that tablet for the rest of my life… I alleviate the situation and when it's fixed, I don't need to take that no more. …………Now I know them people born back in the 1800s or the early 1900s they did not have the traditional medicines that we have today so they had to learn back then how to take care of themselves and they did not have a tablet for every cure or every ailment. So they learned how to take care of themselves. The Amish live to be very old and they don't take traditional medicine. But Western Culture is pumping tablets into you and it's more poison that they pumping into you and more medicine as they claim in the drug world. Cocaine used to be one of the products created by the South American Indians for pain killers right so the Americans went down south and realized that they had something going on so they took that and add it into a drink and called it the elixir of life right because it kills your pain… it numbs your pain right so now because they have a patent on it they created a handle on it and they are now in charge of it, but the people down in South America they created it they have been living for 100s of years on this same home grown herbal medicine but now the Americans get it and they want to exploit it……

> Europeans they as well they lived for hundreds of years they live 100 years, 110 years…and they don't be consuming as much tablets as the Americans do… The Chinese don't do it, the Indians don't do it, it’s only Americans do and they enforce tablets because with more tablets we can make more money off of you, we could sell you more chemicals… we could put more poison in your body and say we are healing you. In India they don't take tablets like that and I have never been to India but I understand that they have millions of people over there and them people living old they in no rush to die. The Chinese have millions and they aren’t in any rush to die and what they eating, they eating………what’s the thing??…. cumin, they eating ginger, they eating garlic and they living long.

Jane engages in ***defying*** type behavior as she admits to taking breaks from her blood pressure medications on Saturdays without telling her physician. On this day of the week she makes a “bush” cocktail to treat her blood pressure. She states: “I use it most on weekends on Saturdays…. and if I take the bush then I don't take the pills because maybe they may not agree”. **Joan** also engages in ***defying*** behavior as she admits to deliberately eliminating her medications and not taking her hypertension diagnosis seriously. She described that although she knows that hypertension is a serious illness and that she should take her medications every day, she just does not take it seriously and she still does not take her medications, as she should. **Joan** stated: “Yes I know it's serious illness but I don't worry myself with that, I don't know why. I just don't but I know it's a serious illness, I don't know… I don't take the medicine when I am in the house”. **Songbird** communicated that he has good knowledge of hypertension and its effects, but engages in ***defying*** behavior because of his dislike for medications. He reported having had only

one doctor that he liked a lot, trusted and enjoyed going to see because he took a more holistic approach with his antihypertensive management. **Song Bird** reports that he liked this doctor's methods "100% more, because he was concerned about getting me off of them…of the meds". He relayed that he has not tried to find another physician since this one left town and that though he knows he need to he has not rushed it. When questioned whether his lag time was due to fear of not finding another physician that he could trust, he stated that this was partially true but he also proclaimed "I think we established that I don't really like meds in the first place". **Lisa** talked about the ***defying*** behavior with reducing sodium intake and described this behavior with the following statement:

> We all like children. Don't, don't, don't, and don't do this because you are tempted. The food around you, everything is either too salty. Even when you eat the vegetarian food they're salty, so unless you eating grass, you know, you really in a position that . . . what are you going to do, you know? Everything, everything is too, too salty, too, too salty. Sometimes it doesn't even taste it so when you try to eat right it doesn't taste good.

Socializing

Socializing is the act of behaving according to societal norms. This is a term used interchangeably with culture throughout this study. Purnell and Paulanka (2003, pg. 3) define culture as "the totality of socially transmitted behavioral patterns, arts, beliefs, values, customs, life-ways and all other products of human work thorough characteristics of a population of people that guide their worldview and decision making". This definition denotes culture or ***socializing*** as a dominating force in any society; a force that actively influences day-to-day activity. Exploring the impact of societal influence on care is vital when evaluating health influences in any group of individuals. Purnell and Paulanka (2003) in their literature highlight

that the understanding of these components of healthcare-related behavior of any population is an essential component that facilitates enhanced opportunities for health preferment, disease deterrence and health restitution.

The United States Virgin Islands constitutes a unique cultural make-up. The island population is made up predominantly of Blacks of African descent. The Islands are located in the Caribbean and a large number of persons from the population migrated from several different islands in the Caribbean. The United States Virgin Islands are also an unincorporated territory of the United States of America and therefore the people are citizens of the United States. These components all influence the culture in various ways and as a result creates a unique set of attitudes, beliefs and ideologies that ultimately affect health and health management, especially in the management of chronic diseases such as hypertension, which is a prominent disease process among Virgin Islanders. Many of the participants elaborated on culture and the components of this that influence adherence in hypertension this discourse allowed for the emergence of the main category of ***socializing*** and the subcategories of ***dietary influences, use of herbal remedies*****,** and ***strong sense of spirituality*****.**

Most participants admitted that there is a strong cultural influence in the way food is prepared in the Virgin Islands. They all discussed the habits of using lots of seasoning containing high-sodium content to prepare foods. Most associate the high salt as an integral part of flavoring the various dishes. **Jasmine Guy** expressed that the habit of using large quantities of salt in the diet is a factor that has “doomed” Virgin Islanders when it comes to hypertension management. She stated:

> Because we need to season our food overnight and the food has to have so much taste. And a lot of people don’t realize that the flavor can come from herbs. Use your onion and

> your garlic but salt is what they use mainly and then they use salt they use *adobo,* then they use *sazon* and they want to put chicken bouillon. They want to see they food pretty so you not even seasoning you're decorating the chicken before it's even cooked. You know so the salt factor and you know a lot of the restaurants too, the salt is so heavy that it burns your tongue. So salt is… you know Hispanics…*long pause*…Hispanics and Caribbean people they generally season their food well I should say. They don't just do a sprinkle of salt and put it in the oven. We need the seasoning to soak in down to the bone. Every time you dig in a piece of meat you want to taste the seasoning. So you know culturally I think that has doomed us.

Songbird also commented on the necessity of high salt in the diet of Virgin Islanders, and noted that the high-sodium content of foods is considered necessary for food to be considered tasty and rich. He shared:

> I'll give you an example right. My brother, wife is from New York. Just an example…. so she spent time with us one time . . . she came to St. Croix, and she went out and she bought us nice steak. She said . . . we're having steak for dinner, right….so she washes the steak under the sink, right, sprinkle a little salt and put it in the oven. We don't do stuff like that here. We season our bad boy with onion and garlic and you know. And we let it sit overnight; let it suck it all the way in there. We like our food tasty, right? So the problem is when you hear . . . oh you gotta cut back on your salt now, your sodium intake, it's hard for a lot of people because we . . . our palates are accustomed to the type of rich foods, and it is definitely an issue, it's definitely an issue.

Montgomery also commented on the high salt intake and characterized the high intake of salt as a Caribbean custom. He commented, "In all the islands you find people um get to too much salt

in the food. You go to the restaurant you get a lot of salt. You go supermarket you get a lot of salt". **Faith** spoke on a personal level when she said "salt . . . yeah. I like my food seasoned". "Salt, seasoning, Accent . . . I like Accent". **Filbert** also talked about the salt content of food and he stated "Yeah, everything is well seasoned, you won't go to the restaurant if the food not seasoned… you get everything well-seasoned". **Mary Joseph** commented on the dietary habits of the US Virgin Islands and discusses the use heavy use of salt. She commented that dietary habits are a major factor in the prevalence of hypertension among Virgin Islanders. She stated:

> They want the food to taste nice, so they put enough salt because remember salt is just an acquired taste. So people like to put salt in their food, for taste. But people fail to realize that more salt you put in, the more water you drink and you're not supposed to be drinking water like that because of the salt. You supposed to be drinking water naturally, not because of eating the salty food. So, I believe people have high blood pressure because of what they're eating, the kind of food, the French fry, whatever they eat out there.

Some of the participants commented on the constituents of a meal in the USVI and commented that the types of foods that are customary contribute to obesity on the island and inadvertently leads to poorly controlled hypertension. **Valerie** stated:

> In the Virgin Islands people we like a lot of starch, and if you go someplace even to the restaurants to eat out they have 3-4-5 different kinds of starch, or you go you just go out to a party and thing you have macaroni and cheese and they have potato stuffing and they got rice and you know all the starches and everybody wants a little piece of each starch".

Agnes explained that it is very difficult for her to lose the weight her doctor recommends to keep her blood pressure under control because of her dietary habits. She describes the typical

daily food intake of the Virgin Islander on a daily basis and comments on the difficulties this poses for her. She relayed:

> It's hard because….you come from a culture here where we drink tea in the morning sugar in it. You have scramble egg, you have bacon, and you have toast. If you lucky and you really come from a West Indian household you having salt fish (salted cod fish, a breakfast delicacy) chopped up in the morning. And you are still going to have your juice, Johnnycake, don bread and cheese. That's your morning…. besides your cream of wheat and oatmeal… Lunch…. rice…. we only just start doing this salad you know. But it was maybe like a peas and carrot. Lima beans. But it wasn't even a lot. But you would have your big meat, your goat, your beef, and your rice, potato scallop, that's lunch. And then for dinner we still eating dinner which is big so we so now when you have to come to say keep away from the starch. Then what do I replace the starch with? Because see that's my struggle, everybody says stop eating rice, then what? I don't do lettuce….I'm not a salad eater. I'm not even a big vegetable eater…………….... So then I'm going to eat and we don't even factor in we have mango, we have all these fruits *jojo* and *kinip* and they going to turn around and tell you that's a lot of sugar. So something is going to kill you! That's just my mentality right now. No matter what you do something is going to take you out because today is good for you tomorrow is bad for you. And now we have this glucose free diet. And then it's like what else are they going to come with.

John also commented on the typical diet of the United States Virgin Islander, exclaiming that high salt and large portions are two main components of diet that contributes to the disease among the people of this territory. He had this to say:

> It's seasoning, they love fried food and the portion here is like when they eat everybody got this mountain of food. So . . . then they tend . . . like I said, they tend to overeat. So when they eat, a couple hours later they eat a next portion again, so you really taking in like triple the amount of sodium intake you supposed to get, and they drink a lot of pop (soda) here too.

Taylor recognized that the high consumption of sodium is a regular practice in the Virgin Islands but also comments that the imported foods have preservatives, which contains sodium is a big factor. He expresses that this factor is not considered so even with all the preservatives when cooking Virgin Islanders still put large volumes of salt, which attributes to the problem of too much sodium intake among United States Virgin Islanders. **Taylor** had this to say:

> The problem with that is a lot of foods we get and. I think people keep forgetting that comes from the States have some heavy preservatives already in it and we down here done already accustomed to using, you know your seasoning, so sometimes it's not even just pure salt but the seasoning themselves I mean that goes to now you being a nutritional fanatic where you are looking at the back of each label…. and you will recognize that even to the seasoning that you putting in are high in sodium.

Another aspect of ***socializing*** discussed by the participants is the use of herbal supplementation as forms of healing. The participants spoke openly about adding and substituting their medications for various herbal remedies. They discussed a lot about using "the bush" which are remedies used to treat various ailments made from boiling plant leaves grown locally and using it as tea. Most participants confessed that they either currently uses some form of herbal supplementation to treat their blood pressure, or they have used these in the past. They admitted that they were unsure of the level of medicinal content that they were obtaining from

the leaves but suggested that these practices were passed down through generations and they also attested to seeing these remedies work not only on themselves but on others who had tried them. **Jasmine Guy** reported using "the bush" in addition to her blood pressure pills she stated that she used these mainly because traditionally they were used and helped generations before her with ailments to live longer. She disclosed:

> Well my mother and a lot of the older generation they believe in their bush. They believe in herbal care. They tell you all the time, "Back in the day you didn't have medicine and people were living longer and you need to use your herbs and your bush and stuff like that." And if it worked for them, I want to live long too so I'm going to gonna try to do what I can. You know it can't hurt me. You know so if it works great. If it doesn't I have some warm tea.

Taylor also commented on the ancestral usage of "bush" for healing and comments that this is a part of Virgin Islands and Caribbean culture at large, he reported:

> Well "bush"…well to me Caribbean and West Indian culture you grow up on "bush" you know…for us in the Virgin Islands a lot of people came from that you know and provision things from the ground where you are toiling and working with your hands on a daily basis even for your crops there are people still to today they are not Muslin where it has to be Hallal or Jewish where they are into those types of meats but they prefer a meat that's coming from a farm people go and find those farmers up in Bodo or Northside where ever and they would try and get that; so for us "bush" was always a heavy thing. For me if I had a fever or having fevers when we were small and "sour sop bush" you know, you sick or you need a cleaning they give you some "bitter bush" and you are smiling you know what I am talking about (laughing). Everything had some oh yeah we

have this for that, we have that… you know the *moringa* oh come take this take some lemon grass and take a little "Jamaican mint" here or and that's been culture and you know for me personally I especially with my mom, my mom would always…. since I recently moved and if I haven't already got get "lemon grass" and pomergranate and passion fruit and this and sugar cane, oh plant this and plant that oh and you might need this here sometime and you might need that there, its culture and I guess the easiest way to explain it is, it's something that is taught and you don't ever forget. It's already learnt so even though you may not do it as often or as much as it was happening back then as a child I still try to keep hold to it.

Some of the participants suggested that they prefer using the "bush medicine" because they have believed that these have fewer side effects than the prescribed medications and as a result are much safer. When some participants were asked if they had to a chance to choose between the pills and the bush medicine many of them replied they would prefer to use the bush because they perceived that there are less effects related to using the bush. **Jane Lewis** also stated that she prefers to use bush medicine and reports if she had a choice "I would choose the bush…Its cheaper… less stress". **Agnes** also admitted to preferring the bush medicine to taking pills. She stated:

It's becoming very prevalent here that people rather go and do the herbs and the spice opposed to go and take the pill. They feel that the pill is manmade and have all kind of different stuff. And then when you look at it too you could understand. When I pick up my pills and I have the fact sheet in it because a, y, z. it's like asking yourself why am I taking the pill cause it's going to kill something else. I don't have that with the bush. I am going to take the bush and that's it. The "bush medicine" more clear up stuff, if I take it

> for my pressure it also good to flush out my kidney it also goes to clear the liver so it's helping me more than destroying like what the pill would do.

Songbird reported a stigma associated with medications. He affirms that he himself has been hesitant to take medications because of this and expressed a preference for bush medicine for his blood pressure control instead. **Songbird** stated:

> I have been healthy my whole life and I guess coming from that to having to deal with that every day and of course there's the long-term side effects from these medications that we may or may not know about, and all that factors, I guess, all build up my wanting to stay away from it. Well I've read some of it and of course there is . . . a lot of people who talk about it, you know. I guess it comes along with a stigma somewhat . . . So I use a combination of just about every and anything to control my blood pressure. I try to get exercise at least three times a week. There's garlic there is *moringa*, there's a bush you want to call *Lizard Food*. The *Lizard Food* is like a yellow fruit that lizards eat . . . that's why they call it lizard food. Back home in Dominica we call it *punkuly* and its bitter but you draw it like most leaves. There is the papaya as well . . . I use the papaya . . . just a whole host of thing and intermittently I just use different ones.

Mary also admits to using her herbal remedies in conjunction with her tablets for better control of her blood pressure. She reports that when her blood pressure is high:

> I lay down and then get back up okay and have garlic tea, it help it. You *pong* (crush) it up and then boil it and drink it, strain it and drink it. I go in the garden and look bush. After the garlic, like a Lizard Bush, it green but it bitter, very bitter, it gets the pressure down. I know about the herbs, sometimes I go to the health store and I have a book and I read and see what kind of herbs to get. The old times days in my grandmother time, she

> use these things back home. She would go and pick them, and say that good for sugar, that good for this she use them things. I know you have to be very careful what you do because you taking the pressure pills. So you have to be very careful. When I drink bush, I do not take the pressure pills until much later.

Montgomery listed several types of bush medicine that he recalls are used to control blood pressure in the Virgin Islands and other Caribbean Islands. He shared:

> Some of the herbs that I use I know that in the Caribbean it is used for blood pressure or assisting in controlling high blood pressure. Well from hearsay growing up we used uh papaya leaves; we use um *arude*. Um we use *fiscal*, I have a lot of *fiscal* trees out here (pointing to his back yard). I can show you what it's like. We use *fiscal*. You ever heard of the um…I've never used it…but have you ever heard of m*anchinin*? It grows by the sea, if you eat the *manchinin* fruit its poison. Deadly poison, but if you use the leaves it's good for high blood pressure. Another bush that they say is good for high blood pressure is *murklime* it grows by the seaside. It's a limey type of bush and it gives off a limey type of aroma. They say that is good for it (referring to high blood pressure) and um "whitehead bush is also good. Dandelion bush is also good for high blood pressure…so lots and lots of different ones.

A ***strong sense of spirituality*** in relation to healing was echoed from the voices of several participants. They reiterated the presence of a strong spiritual faith filled base that helps them to deal with stress and the everyday nuances that may cause their blood pressures to rise. Participants voiced that the implementation of prayer as a part of their regimen has helped them significantly. **Songbird** disclosed using prayer and his faith in God as a source of management

but also shared that though he trusts God, he does believe that God gave man the knowledge to assist in care but points out that so that they can care for the sick, he stated:

> If you have a relationship with God, right, and you put your trust in Him right, then when difficulties come your way, you say . . . Lord I can't deal with it but you promise you gonna take care of me, right. So when we talk about stress now, if you rely on Him to take care of that burden for you then you don't worry about it as much and that's definitely a factor here. Ben Carson, before each operation, he used to ask the patient . . . do you mind if I pray with you . . . and that was one of his thing. And I saw an interview with this lady who her son was having some kind of brain surgery and she said . . . from the time he said that I knew everything was going to be all right okay? Just the fact that this is a praying, God-believing, God-trusting doctor, God is going to direct him and everything is going to be all right. So when you look at it from that standpoint, definitely spirituality plays a big role in stress relief and. However, however, the flip side to it is that there is some religious persuasion that believe that God is going to take care of all of your health needs, so you don't need to go to the doctor, so the flip side is going overboard with just depending completely on God, because God gave man the knowledge to assist you in your health as well, so you have to be smart how you balance that.

Albert Cadet also talks about his ***strong sense of spirituality*** and how this helps him to cope and manage his hypertension. He stated:

> Well I should say I am not taking any of these things to say well I . . . since I don't have this, I don't have that . . . I am being thankful unto God that he supply my needs, you know . . . not my wants, my needs. He gives me bread in the morning thanks be to God. He give me bread in the night, thanks be to God. He supplies my daily needs, so why I

> should be finding myself stressed about that, you know. Little as it is, when God is in it, nothing bothers me, my dear. Sickness is something that we cannot really say well we can avoid it it is there. You might be Miss King, you can be Mr. So and so, something in your life, something will happen to you that . . . because we all are sinners and because of sin certain things will come to our life. So I just as I said, I wouldn't bother myself. It comes . . . God knows why. God knows why he gave high blood pressure. So to behave myself a little bit, look at things, I am eating, things I used to do, I do them no more…I am sick; God know why.

Blossom also reported implementing prayer as a significant and relevant aspect of her healthcare management. She stated: “We have to believe in God; and put Him first in everything that you do your strength comes from the Lord Almighty”.

Mary Joseph believes that lack of prayer among some people leads to poor stress management and allows illness to flourish. She stated:

> Some people don't know how to manage or how to deal with their problem and so they let it go to their head and eventually turn into high blood pressure. Because in the Virgin Islands, a lot of people don't know . . . …………but a lot of people don't know how to pray, go down on the knees and pray in front of God. Okay. Because some people just believe they can do everything for themselves. But let me tell you, without God we can't do nothing. We can't do anything. So . . .

John also highlighted the advantage of prayer. He stated: “Praying, it's good… it's very good, Because you get a lot of stuff accomplished with prayer; sometime you go to the doctor and he say one thing but, you know, with prayer anything is possible.”

The participants' voices spoke to ***socializing*** and its significant impact on healthcare management. They articulated this through their vivid descriptions, which allowed the researcher to formulate this category. The sub-categories ***dietary influences, use of herbal remedies*****,** and ***strong sense of spirituality*** substantiated ***socializing***. ***Socializing*** emerged as a substantial and applicable factor that influences adherence to therapeutic medical management in the hypertensive United States Virgin Islander.

Financing

The term ***financing*** is familiar to all aspects of life; this term basically refers to gaining capital or money. ***Financing*** in healthcare is very important because patients need money so that they can see the doctor or purchase their medications and pay for other health care-related expenses. Currently health system financing is a major endeavor that stakeholders are looking towards to provide safe affordable healthcare to all. The World Health Organization (2016) terms heath system financing as "A well-functioning health system working in harmony is built on having trained and motivated health workers, a well-maintained infrastructure, and a reliable supply of medicines and technologies, backed by adequate funding, strong health plans and evidence-based policies" The people of the United States Virgin Islands expressed great financial concerns in relation to managing their blood pressure. Some reported difficulties with medications and healthcare cost due to not having insurance and others mentioned that even with insurance sometimes cost is a factor. Several participants stressed that the state of the economy, cost of food and the lack of jobs was a great hindrance to adequately managing their disease. The participants' voices supported this category of ***financing*** with their interviews and the researcher could extrapolate rich data that supported the subcategories ***healthy eating, purchasing medications,*** and ***long-term sustainability.***

Participants throughout this study echoed concerns about ***financing***. When asked about instituting a healthy diet, many made statements about the cost of food and how it hindered them from purchasing the types of foods that would fulfill their health practitioner's definition of a healthy diet. Such foods are very expensive and therefore not easily affordable. **John** shared that even though he knows that he should not eat processed foods the high cost of non-processed food makes it hard to adhere to a diet that is considered healthy for someone with hypertension. He compares the cost of food on the islands to that stateside and verbalized:

> I go grocery store, I still get a shock when I see the prices here, you know. But 90% of the time, the cheapest thing you're getting is salt, is the salt that's not good for you, a lot of processed food and stuff like that. You get fruits and vegetables here, it's crazy, and the price is very, very expensive. And also, sometime . . . I don't lie to you, it's very hard to eat healthy when you want to because most of the time most people really can't afford it . . . they can't afford it . . . so like I said that contributed to it a little bit too, you know.

Faith also compared the prices of food on the islands to that in the States and stated:

> Because when I got to the States and my daughter lives in Orlando . . . the oldest one . . . I eat all the fruits, everything I want, I go crazy, strawberries, plums, this. You can't get that down here for that price. I eat a whole thing of strawberries for like $1.99. You buy it here for like $7, you know, plums, grapes, everything so cheap.

Valerie commented:

> When I go to the States the price of food is not bad ……but I have always known that the Virgin Islands, that the price of food here is high... even before I came here to live I came down here on a vacation I was living in New York and I came down here and I said when I when I go back up I will never complain about the price of food again.. (Laughing) So I

know that it was high before I came here to live and then when I go to the States over the years sometimes I go to New York, sometimes I go to Virginia or I go Florida I see that the difference in the prices of food is very vast and but we don't live there we live here even if you go up there and you shop and bring down stuff and then it's not easy to bring them down anymore because the airline is charging you so much to bring down stuff… Before you used to get some two 70lbs bags now you getting a 50? And you have to pay to bring them so it's not even like before the airlines are making all the money and you still you pay a big fee and you have extra baggage, you don't even want to walk with extra baggage anymore because it's the cost is phenomenal.

Songbird also compared the prices of food in the Virgin Islands to that of food in the States and reported the following:

> Every time I go to the States and I come back home, I have sticker shock. Sticker as in price, sticker shock! We went to Pensacola last summer, spent two weeks with a friend of mine, and we went to Walmart. I'm like you got to be kidding me. So these, what you call them, it's nothing with health right now . . . these Klondike bars . . . woo-woo a Klondike bar. Okay, there's of 6 for $1.99. I'm like you got to be kidding me. So I bought one and over the two weeks I ate one, one, and one. Came back home and I saw it at the Pueblo. I'm like let me see the price . . . $6.99. Got to be crazy, really!

Joan commented that eating healthy is very difficult for her and her family because of the cost of food. She stated:

> Groceries are very expensive, because they tell you to eat healthy and when you go in the store you can't eat any cabbage…..not cabbage I mean lettuce, you must by the good ones and it is expensive you cannot, even though. If I go and do shopping for one week,

> you can eat only right for one or two weeks after that, you cannot eat what they tell you to eat because things expensive.

Donika also commented on the difficulty maintaining a healthy diet because of cost. She avowed:

> What is healthy for you is the most expensive things here. There's a health food store just down the road. You gotta sell your soul for you to afford stuff in there. It's . . . we have a little sore where you buy fresh produce, but by the time you pick up 1 pound of something, it's like, it's unbelievably expensive.

Lisa reported great difficulty affording to eat a well-balanced diet, but she commented that she thinks that the high cost of healthy foods is basically an arranged system that allows for the common person to continue eating unhealthy so that the health care industry to continue thriving. She had this to say:

> I can't afford to keep up with all the different fruits and vegetables and the different seasoning, the herbs and stuff like that. Even when you go to buy regular food, it's like 50 something, 60 something dollars for 7 items, and then a lot of people just give up. Of course, it's designed that way you understand. It goes a little deeper than that but . . . I think it's designed that way. The way we eat nowadays you can't say that you're eating food; you are eating processed food. So it's designed that way.

Some participants expressed difficulty with adherence to their antihypertensive medications and healthcare visits due to economic depression. **Blossom** declared that she is the only financial provider for her and her husband. She acknowledges that having one income makes it very difficult at times to maintain the necessities to survive and even more difficult to afford the blood pressure medications prescribed by her doctor. **Blossom** affirms having

difficulty controlling her blood pressure due to inconsistencies with taking her medications. She disclosed:

> For example if I go to the doctor and they see my pressure is high, he will ask me what's going on and I'll say . . . well I'm a person that easy to get worried. I just had my examination this morning and I was so worried . . . anxiety, I was sweating, I was nervous and it's over. So he will sit with me and he will tell me . . . you didn't take your medication . . . the first thing he will ask me . . . did you take you meds? I will tell him no. I'll be honest I tell him no . . . then he ask why? And I say, “I'm out”. But sometimes I don't have the money to buy the meds.

Mr. Joseph expressed having tremendous difficulty affording his medications because of the high cost of his medications and his lack of adequate healthcare coverage. He described of some of his financial difficulties as follows:

> My lady let me tell you something, its expensive… and I can’t even afford to buy one vial, especially the uumm “*Cincepa”* is expensive a lot, and how much they giving you…. 11 in a vial for $1200. That's for the Kidney. Yeah I try to get a little help but they say my wife making enough money and my insurance, the insurance from the time I leave work the insurance not there but they insist on telling me the insurance must help me, but its no! The insurance not there because it have a year and something that I did not work, I cannot work then the insurance cannot assist me, but I trying to get a medical card and I don't get it as yet, I trying, I don't get it as yet

Candy expressed that she did not have healthcare insurance because her teacher’s paycheck is just enough to maintain her daily living expenses and to deduct the insurance premium would leave her unable to sustain herself. She reported that lack of insurance has caused her to see her

doctor less, which could potentially affect her hypertension management. **Candy** indicated that having insurance would cause her to: “I would probably get to see the doctor a little more often... It’s not that I don't go to doctor appointments or if I am feeling sick I don't go, it’s just that if I had insurance I would have gone sooner than later”. Some participants discussed the closing of the oil refinery on the island that provided jobs for a vast portion of the population and engaged the economy of the Virgin Islands. The participants reported that with this industry gone, the loss of revenue has impacted the people tremendously and has produced increased stress, which ultimately affects the rate and variability hypertension among the people. Their stories reflected the direct impact of this economic strain and the long-term sustainability that is a direct result. **Blossom** in her interview discussed the effect the depressed economy has on her household; she had this to say:

> Stress is something else, you know. When you have stress, it's like . . . oh my goodness . . . that's your high blood pressure going up. You have a bill you cannot pay it. My husband isn't working. You coming over your salary, you have to pay this, you have to pay that, you don't have any money. These days I have to help him because I have to buy his medication, so that's another stress add to it. So I try not to think about it. I just try not to think about it. He's not working . . . he’s not working. The Lord provides. If he works, he work, but he is not working, what can I do.

Faith communicated that the lack of salary is a big contributor to poor health she had this to say:

> We have not had a raise since 2007 . . . isn’t that awful? Since 2007 . . . now you get a little paycheck and they have one or two job. I'd be back in the late hours sewing to make a little extra money. Sometime I cook to make a little extra money, lack of sleep…insufficient rest.

Mary Joseph also commented on the lack of revenue and its impact on hypertension for the people of the United States Virgin Islands. She stated:

> You see, in St. Croix no work. This is stressing out people. You see one office and they bill to you, it is stressing you out. When you go to the supermarket, the foods are sky high. This is stressing. Sometimes I go . . . I mean it's only me and my husband . . . when I go to supermarket I want to walk back out, because every week you go plaza is raising the food, everything is going up, up, up. So the cost of living down here is stressing people out. So this is playing a big role in high blood pressure.

Valerie remarked on the financial state of the islands and emphasized that stress stemming from lack of revenue and high cost of living continues to impact people of the Virgin Islands negatively and contributes to the prevalence of hypertension among US Virgin Islanders. She stated:

> Maybe the stress too, you know Hess closed down people don't have jobs and at one point I think everybody, everybody was stressed out over WAPA, WAPA was killing us; I used to pay $3 hundred something $4 hundred something a month for electricity... Thank God I don't know what they did but it has come down to $100 and something now… but it was a long period… Many years for some people it's either you have current (electricity) on or you have food. But it was very hard and a lot of people not working and then the wages are not very good… Umm, so people are under a lot of stress we have that and people have personal stress and so many things happening the Island is undergoing a lot of rough changes and….I believe that that contributes a lot..

Albert Cadet also talked about a failing economy and its impact on long-term sustainability. He reported:

> Work is very, very scarce here in St. Croix. From January up to today, we are in March . . . I never do a full week work here in St. Croix. Sometime two days, sometime three days, and that's it two days, or one day.

Mr. Indian discussed the long-term sustainability effects of the poor economy of the Virgin Islands and he detailed:

> Well here health care cost is high, why? Because insurance companies they don't have large volumes of people to cover… So because of your small population the cost is going rise. Now "Buppa" that did a lot of insurance coverage on the Island is pulling out because the oil refinery closed down and they lost people… Now they are putting out more than they are getting in… So they are pulling out slowly…. the other health care insurances agencies that are here are facing the same thing even with the automobile industry for insurance purposes they are raising their rates because of the small amount of coverage that they have same thing with housing so the entire spectrum of living on the Island is always going to be based on that factor, population vs. demand so if your demand is great but you do not have people to support the industry the industry naturally is going to have to raise its rates… and that's what we are facing.

The participants' voices spoke to the core category ***financing*** and substantiated it with the sub-categories ***healthy eating***, ***purchasing medications*** and ***long-term sustainability***. They provided vivid descriptions in their interviews that allowed the researcher to conceptualize and formalize this category. *Financing* emerged as a prominent factor contributing to adherence to therapeutic medical management in the hypertensive patient from this region.

Interviews with all the individual participants provided rich data that helped to evaluate the phenomenon of the factors that adherence in the hypertensive population from the United

States Virgin Islands. There were a total of 21 individual participants that represented the entire Virgin Islands. The researcher identified five major categories: ***mistrusting, reacting*****,** ***educating, socializing,*** and ***financing*** which all substantiated the phenomenon under study. These categories were further supported by the sixteen sub categories. ***Mistrusting*** was supported by *perceived lack of provider caring, perceived lack of provider cultural sensitivity, perceived lack of adequate provider credentialing* and *perceived inflation of healthcare cost*. ***Reacting*** was supported by the sub categories: *fear of complication* and *symptom-based management*. ***Educating*** was supported by the sub categories of *denying, relying, owning* and *defying*. ***Socializing*** was supported by the sub categories *dietary influences, use of herbal remedies* and *strong sense of spirituality*. The category of ***financing*** was supported by the subcategories *healthy eating, purchasing medications* and *long-term sustainability*. These all gave way to the materialization of social process of ***deciding***.

Focus Group Characteristics

The second phase of this study consisted of a focus group comprised of (*N*=4) participants who were from the Virgin Islands, had a self-diagnosis of hypertension for greater than 20 years and had been placed on antihypertensive medications by a healthcare practitioner. The focus group members were recruited using flyers and through word-of-mouth, but were selected by the researcher based on inclusion criteria. This group was comprised of individuals the researcher believed would expertly represent the population. The sample for the focus group was made up of four women, two of whom were originally from St. Croix, one was from the Island of St. Thomas and the other was from St. Kitts, but had been living on the Island of St. Croix for over 31 years.

The women were all over the age of 50 and all had been diagnosed with hypertension for more than 20 years. The focus group meeting took place in a conference room of a local businessman. The area was cool, clean and quiet. All participants were available for the face –to-face meeting. All participants were given an opportunity to read the study consent, ask questions and sign prior to starting the interview. The participants also completed the demographic questionnaire prior to initiating the interview process. Each participant was given the opportunity to choose a pseudonym at this point. Two participants choose to use a pseudonym while the other two choose to use aspects of their names for their choice of pseudonym to be utilized in the study. All participants were thanked prior to initiating the interview. They were also informed of their right to stop the interview at any point, or choose not to answer any questions during the interview process. All participants were handed a $25-dollar American express gift card prior to beginning the interview as a token of appreciation for giving their time to participate in this study.

Table 4. Demographic Characteristics Phase II (Focus Group) N=4

Variable	**Characteristics**	**Number**	**Percentage**
Age	50-60	2	50%
	61-80	2	50%
Gender	Male	0	
	Female	4	100%
Race/Ethnicity	*Black or African American*	3	75%
	Hispanic or Latino	1	25%
Education Completed	*Grade 12 or GED (High school graduate)*	2	50%
	College 1 year to 3 years (Some college of technical school)	1	12.5%
		1	12.5%

	College 4 years (College graduate)		
Employment Status	*Employed for wages*	1	25%
	Retired		
		3	
Island or Country of Origin	*St. Croix*	2	50%
	St. Thomas	1	25%
	St. Kitts/Nevis	1	25%
Number of Years living in the United States Virgin Islands	*31 and greater*	4	100%
Health Care insurance	*Yes*	3	75%
	No	1	25%
Number of years with diagnosis of hypertension	*16-20*	3	75%
	20-30	1	25%
Primary Care Physician	*Yes*	4	100%
	No		
Number of Antihypertensive Medications Taken Daily	*1 Tablet*	1	25%
	2 Tablets	2	50%
	5 Tablets	1	25%
Eliminated taking Antihypertensive Medications	*Yes*	2	50%
	No	2	50%
Deliberately Omit Doses of Antihypertensive Medications	*Yes*	2	50%
	No	2	50%
Have Missed Medications in Past Week	*Yes*	2	50%
	No	2	50%
Use Other Methods Not prescribed By MD for BP Control	*Yes*	2	50%
	No	2	50%

Bernice is a 77-year-old Black female retired, originally from the Island of St. Kitts; however, she has lived in the United States for more than 31 years. She reports a diagnosis of hypertension for the past 26-30 years. **Bernice** has a primary care physician who manages her hypertension, she takes 5 tablets daily to manage her blood pressure, which she said she takes everyday unless she forgets. She denies using methods not prescribed by her healthcare provider to manage her blood pressure.

Elaine is an 80-year-old Black female retired, originally from the Island of St. Croix. She has lived in the United States Virgin Islands her whole life. She has had a diagnosis of hypertension for approximately 20 years. **Elaine** has healthcare insurance and has retained a primary care physician who manages her blood pressure. She takes two antihypertensive medications daily. **Elaine** takes her medications as scheduled and does not miss doses. She does mention using other alternative methods not prescribed by her physician to manage her blood pressure.

Prince is a 60-year-old black retired female originally from the island of St. Thomas who has lived in the United States Virgin Islands her entire life. She has healthcare insurance and she has retained a healthcare provider who manages her high blood pressure. **Prince** has had a diagnosis of hypertension for approximately 20 years; she takes two tablets daily as prescribed by her healthcare practitioner, which she deliberately omits regularly. Prince admits that she only takes the medications when she feels she needs to and expressed that she had missed taking her medications for the entire week leading up to the interview. **Prince** explained that she uses other means of blood pressure control not prescribed by her healthcare practitioner.

Zaida is a 57-year-old Hispanic female who was born on the Island of St. Croix. **Zaida** has lived in the United States Virgin Islands most of her life. She is currently employed for

wages but states that she has no healthcare insurance. She does still have a primary care physician on St. Croix, but also has a primary care provider in Puerto Rico because this is more affordable for her. She has had hypertension for approximately 20 years and she currently takes one tablet to manage this. **Zaida** admits to deliberately omitting her antihypertensive medications at times. She denies the use of any alternative therapies to manage her hypertension.

Confirming of Categories

The focus group interview severed to bring clarity to the categories and sub categories that manifested through analysis of the individual participant interviews in phase one of the study. All participants in this group have had a long-term association with the variants of this study foundational in answering the research questions posed by the researcher. All participants were either born in the United States Virgin Islands, or have lived on the Islands longer than 20 years. The participants are all age 50 and older and have had a diagnosis of hypertension for 20 years or more.

The researcher instructed the participants on the categories and subcategories that were uncovered during the individual interviews in Phase One and they all gave their perspective as to how well these categories and subcategories represented the hypertensive population of the USVI. The focus group interview was mostly conversational, with all the participants participating at varying times; however, one participant dominated most of the conversation at times and in these instances the other participants agreed to comments rather than initiating their own. It also appeared that the group participants did not speak openly on all the topics voiced. This was identified in reviewing the demographic questionnaire where one participant documented the use of alternative therapies to control her blood pressure but did not openly admit to this in the discussion and another participant reporting that she deliberately eliminated

her antihypertensive medications, but did not affirm this during the group discussion. These reservations could have been due to the association of a certain stigma associated with these topics. The feedback from the expert group is represented in the following section.

Mistrusting

The participants of the focus group participants confirmed the category of ***mistrusting*,** and the sub-categories of ***perceived lack of provider caring, perceived lack of provider cultural sensitivity, perceived lack of adequate provider credentialing*** and ***perceived inflation of healthcare*** *cos*t to some degree. They confirmed the voices of the individual participants that many people in the United States Virgin Islands do not believe in the healthcare system on the Islands. They gave reasoning for this, affirming that some people basically mistrust because of bad experiences with healthcare events; perceived lack of adequate credentialing on the part of the healthcare provider, and also perceived elevated healthcare cost in the United States Virgin Islands. **Elaine** affirmed trust in her current healthcare provider but did agree that there was a great deal of ***mistrusting*** among Virgin Islanders in general. The participants disclosed the following with regards to ***mistrusting***: **Bernice** stated:

> Some of them just come with false statements. They say they are doctors and they are not. Our government here don't…they don't do their homework when they hiring. When they hiring you as a local some local people they scrutinize you know but when they bringing people in they are not as vigilant.

Her ***mistrusting*** stemmed from the belief that practitioners were allowed to practice without adequate credentialing which placed the Virgin Islands people in danger.

Two of the other participants agreed with **Bernice** affirming the sub-category of ***perceived lack of adequate credentialing*** as a perpetual catalyst for ***mistrusting*** among United States Virgin

Islanders. **Bernice** went on to say: "I went to one who was not qualified…they think he's qualified, and he had the big sign on the door. When you look he's not there anymore" **Prince** and **Zaida** agreed with Bernice's comments.

The participants went on to elaborate on ***mistrusting*** due to ***perceived inflation of healthcare cost*** and concluded that some practitioners only had the motive to make money. Price exclaimed: "they want to make money" **Zaida** added: "They feel like they spend a lot of money to go to school and they…" **Prince** interjected: "Exactly and they want to make it up they have to their student loans back". **Elaine** brought up the point about the fee schedule: "here is a fee schedule. Your standard fee schedule, It's more of less basic" **Zaida** added:

> I work for a doctor myself and we don't practice like these new doctors. And still I have people complain in my office that we're charging too much when we're the cheapest in the island. Like a person with insurance does not pay the same thing as a person without insurance. I have to do the billing so there are a few schedules that the insurance allows you to bill and then there's the one we charge for the person who doesn't have insurance.

The participants had further discussions related to perceived inflation of healthcare cost. **Prince** and **Zaida** elaborated on their experience with increased healthcare cost below:

> **Zaida:** I can't afford insurance here. So I have insurance in Puerto Rico. So when I go I have my address and everything with my sister over there. So I would go to the doctors there and it's unbelievable and ridiculous the difference in prices. That it's cheaper for you to get in a plane and go do all your physicals and everything over there than doing something here.
>
> **Prince:** I used to go to a doctor for my hypertension and then he wanted me to come every two weeks. He got a doctor working in the office with him and the doctor…the first

> time I saw him…he told me come back in either four or five weeks. So what that tells me you're just trying to get money out of me. And some doctors rush you out of their office too. They have so many patients coming they rush you out. They set the appointments so close to each other. "Okay now well I see you in two, three weeks." Because they moving you out for another one to come in. So you're like baggage………. I think everyone goes off island because they don't…they just don't trust doctors here. They just don't feel comfortable with doctors here.

Elaine maintained that she had faith in her doctors in the United States Virgin Islands. She concluded that the lack of trust in healthcare providers among United States Virgin Islanders stemmed from the fact that Virgin Islanders held physicians there to an unfair standard, assuming that mistakes made by physicians there are beyond those made by physicians elsewhere. **Elaine** stated:

> I consider my primary care doctor very competent, Dr………. um…I'm pretty satisfied with her. Well other health care matters like when I had my knee problem and I was sent to um ……… hospital in the States you know they help…that was different. But um I find my doctors here I'm satisfied with them. We here in the Virgin Islands think that it's only here doctors make mistakes. We always say it's only on St. Croix does these things happen. You go to the states the same foolishness happening. It's not just here.

The category of ***mistrusting*** was well supported by the group participants. The participants highlighted this category and gave it substance through their rich descriptions. Their articulation of ***mistrusting*** was also enunciated through the vivid descriptions that substantiated the subcategories of ***perceived lack of caring, perceived lack of cultural sensitivity, perceived lack of provider credentialing*** and ***perceived inflation of healthcare cost***. The data analysis

from the evaluation of the data received from the group participants helped the researcher to solidify and undoubtedly confirm the category and subcategories presented here.

Reacting

The participants confirmed the category of ***reacting*** as a means of healthcare management in the United States Virgin Islands. They reported a tendency to neglect blood pressure management among hypertensive individuals in this territory for a variety of reasons. The reasons for ***reacting*** to their hypertensive care management were confirmed by the group through the subcategories ***fear of complications*** and ***symptom-based management***. The participants reported diet management as a result of diagnosis, monitoring of disease based on symptoms and caring for disease based on symptoms. The participants conversed on these ***reacting*** type behaviors and they agreed with each other's statements consistently confirming the categories and subcategories. The researcher asked the participants if they felt that hypertensive persons in the United States Virgin Islands took initiatives to manage their blood pressures due to fear and consequences of disease. The response was a resounding "Yes" and the participants were able to make some references of their experiences with this. **Elaine** commented that the reason some people have such high blood pressure is because they do not take their blood pressure on a regular basis. She believes that the lack of taking the blood pressure medication is because people in this territory do not get regular check-ups and do not know that they have hypertension because they never get checked by a physician:

> I think too and a lot of people do not take their pressure regularly either. A lot of people especially men don't go to a doctor. So people walking around with a high sugar…I mean pressure and they don't even know because they're not paying attention to it at all. Like

you say they considering the sugar more important so they don't even bother to check the pressure.

Prince admitted that she herself engaged in reactive type behavior in managing her blood pressure. She explained:

> A lot of people don't really want to take the medicine. They don't like the medicine but they are afraid of what will happen if they don't. Well I myself I weaned myself from the medicine. At first I would um take it every day and then I started to take it every other day. I told myself "I am getting off of this medication"………. So I started taking the medication every other day. First I was taking 10 milligrams of the Norvasc. And when I went to the pharmacy they didn't have the 10. So they gave me double portion of the 5. So I wouldn't take the double portion I would just take the five. And it worked well so when I went to the doctor I told him. He reduced it! Because my pressure was excellent and I was feeling fine…I said okay good. He's not telling me not to take it you know but it's like you know well you know you have to be careful. So I start taking every other day until I stop take it. But like I said…I got my pressure cuff and if I have to take it I go back on it. I don't have a problem with that. I'm not I'm not totally against it but I feel if I could monitor it and control it why should I keep swallowing all this stuff? When I feel pain or funny feeling I rush to that monitor one time, to make sure it's not my pressure.

Zaida considered reacting-type behaviors as taking chances with high blood pressure. She explained:

> A lot of people take chances; they don't take their medications like they are supposed to and I used to do that before, every day for me was work work, work, work. I would forget to take it. And like you said…when I start feeling a little pain or something weird going

> on in my body I run for the monitor. Now I don't do that anymore I take my medicine. I don’t play I take it every day.

Bernice did not comment on reacting but confirmed this category and the subcategories by affirming the responses of the other participants as they spoke.

The focus group participants supported the category of ***reacting*** and the subcategories ***fear of complications*** and ***symptom-based management*** through their explicit and rich explanations. The participants were perspicuous in their descriptions, which provided the researcher substantial data that efficiently supported these as previous categorized. The voices of the group participants provide solid grounds that allowed the researcher to conclusively conceptualize the ***reacting*** category and its subcategories.

Educating

The group participants offered a lot of insight on education that was insightful at evaluating the derived category of ***educating*** as a category in this study. The group individuals shared their experiences with obtaining education from their health care providers but they also elaborated on the lack of initiates from a healthcare community standpoint in raising the awareness of hypertension as a disease and providing education on the importance of management. Each participant expressed a lack of adequate education from healthcare providers at diagnosis. The participants also pointed out that the community education initiatives are more geared to diabetes, making hypertension seem less important and less dangerous to the community at large. See the participants’ comments below:

Prince talked about her experience at diagnosis and stated:

> I was first diagnosed with diabetes and that the doctor explained that very very well. And a lot of it was the stress and he made me stay home because it was so the job was so

> stressful. And then one day I started to feel so terrible they had to take me to the doctor and that's when I was told I'm hypertensive. And um the one thing that stood out in my mind that that doctor said to me is…because I asked the question… "When can I come off of this medication?" and it's like yeah you come off medication …… and um yeah you don't take your medication until you're all stroke out. That's what he said to me. And I didn't like that too much because I feel that you can control some of your sickness. If you alter your behavior change your eating habits, you are exercising more. You avoid as much stress as possible. I feel that some of us… and I'm not saying everybody…some people can change. So…but they don't want to give you that option. Most of these doctors just want you to stay on pharmaceutical forever. And their telling you once you come on you can't get off. I personally don't agree with that.

Zaida commented on the lack of education that she obtained when she was diagnosed. She articulated:

> Well he said I had high blood pressure and my high blood pressure came with a lot of headaches. Plus I used to suffer migraines. Uh for some reason my migraines have gone away but I'm still struggling with the high blood pressure but he never…well basically what he said is you have to exercise and change the way you are eating. Reduce the salt intake…I had to change………and that was it after that I just started taking the pill.

Prince asserted that there is a significant lack of education among Virgin Islanders when it comes to hypertension management. She reports that the healthcare community and stakeholders put much more emphasis on educating the population on the effects of diabetes and hypertension is then not given the attention there, so people are less likely to take it seriously. She stated:

> I think that's what's wrong here in the Virgin Islands; I think um diabetes is more recognized or more talked about or more trainings on it than hypertension. A lot of times but people are more…I hear of diabetes classes…the hospitals have a diabetes class. They have a diabetes class at the church. You know I'm hearing all the time whenever I hear about a class its diabetes and not high blood pressure. People don't pay attention to the blood pressure because what they looking at "Well if I got sugar my eyes going go bad." You know but they are not thinking that if my pressure is too high I can get a stroke. The education is more geared towards diabetes**.**

Elaine also commented on her experience with obtaining information about her disease and its management at diagnosis. She expressed:

> I was working in Frederickssted Health Center, having to travel daily and then it came to a point where…well three of us there operating the office. The other two ladies have stayed home one week. I was left with an enormous amount of work to the point where I got sick. I had to go to the doctor and that's when I was diagnosed. The doctor did not give me much information, he just said whatever I'm doing you know… Had to change…. he explained that the medication it was you know for my treatment, but not to go into you know much details.

Elaine went on to express that because she did not get information from her healthcare provider, she engaged in behaviors consistent with the subcategory ***owning*** and took initiative to obtain information on her own. **Elaine** stated "I got more experience from reading on my own".

Bernice echoed that she also experienced a lack of education at diagnosis, stating that:

"They explained to me in the states… It was after I went to the states that I learn about my high blood pressure…the doctor there told me about it and he tell me what to eat to help control the high blood pressure".

The participants confirmed the subcategory of relying affirming that people in the Virgin Islands do have a lot of respect for healthcare providers and as a result depend on their knowledge and judgment to make sound decisions when it comes to their healthcare. **Prince** acknowledged this in stating:

> But that's how a lot of people think they are the doctors, they went to school, they know. I have a problem with that. You don't know. Because you giving me tablet you're telling me oh I don't know what's wrong with you but take this. And I have a problem with that. If you don't know what's wrong with me why you giving me something to take? You know so we are…we have so much respect for the doctor and his position that we don't feel we need to ask a question. They say I need to take this I'm taking it.

Bernice also confirmed the subcategory of relying she expressed:

> I just started to talk to my doctor. You know, and she will ask well "Mrs. Bernice what happen to you now? Can we talk?…talk to me.." You know? And then you will explain to her. But some doctors don't ask that so you keep your mouth shut.

Elaine and **Zaida** confirmed the category of relying by affirming the remarks made by **Prince** and **Bernice**. They both nodded in agreement to the statements made by these two ladies.

The group participants confirmed the category of ***educating*****.** Each participant gave unequivocal descriptions of their experiences with educating and conveyed language in their descriptions that supported the subcategories ***denying*****,** ***relying, owing*** and ***defying***. The confirmation of these categories and subcategories allowed the researcher to coagulate them and

succinctly evaluate the phenomenon. The group participants in their description regarding ***educating*** allow for culmination of this category, which gives credence to the voices of the individual participants.

Socializing

The participants agreed that there is a strong cultural influence in hypertension management in the USVI. They discussed their experiences with ***use of herbal products*** for management and they also discussed their experiences with cultural ***dietary influences*** affirming their experiences with high-sodium intake. When asked if high sodium was a big cultural influence on blood pressure and its management, all participants echoed a resounding "yes". Two of the group participants revealed that they do not use any kind of herbal products, but they offered knowledge on some of the products used by locals and they also discussed the tendency of the locals to gravitate towards this form of management. Participants who used herbal products discussed their use and the efficacy of these for them. The group participants also discussed the cultural impact of a ***strong sense of spirituality*** among persons from this territory and how this is implemented into healthcare management of the people of the Virgin Islands. The participants' discussions on these are detailed below.

Bernice indicated:

> Caribbean people we grew up on bush tea. Well I mean maybe not your generation. We grew up on all of this old thing and especially people from the islands they had the little garden they go outside and pick the fresh things. You know so they grew up with that mentality. That's a cultural thing for them. I know a neighbor she had all these things…diabetes, high blood pressure and something else and they told her she must walk

> and drink bush and plants. She got all kinds of bush plant. She came right down, lost the weight and she stopped taking the tablets.

Zaida added that even though she herself does not use herbal products, she knew of several individuals who used herbal products in the Virgin Islands with good results. **Zaida** verbalized: "I know a lot of people that uses it and their stories are like great but like I said before I won't be mixing at all because besides my high blood pressure pill I have a lot of other pills I have to take". **Prince** advocated the use of herbal products and confirmed that she herself did use these herbs, but was cautious not to mix them with her prescription medications. She stated:

> I don't use herbs and the medication at the same time. If I don't take the medication for a couple of days or whatever and I find that my pressure is up I'm going to use herbs…I don't use all sort of other herbs. And um I'm not against herbs and it all depends on your condition. I…if I'm feeling good I won't take my medicine you know but if I need to I definitely will and I definitely do you know but there's a time where I feel like I'm doing pretty good………….I do monitor my pressure. I'm on top of it and I feel that if need be I will take the medication and I will not mix them. I think if it's really kind of high I'll take the garlic and then later on I'll take the medications because I cook with a lot of garlic any which way, so I don't think the garlic is going to give an adverse reaction but the regular bush that a lot of people use I wouldn't mix both of them.

Elaine voiced that a lot of people use herbal products based on advice that they got from someone else in the community without being cautious.

When discussing the cultural impact of sodium on the diets of the people of the USVI, all participants confirmed salt as a major constituent of foods in the Virgin Islands. Elaine noted that the two main problems contributing to the prevalence of hypertension is "I think stress and diet,

a lot of salt in the foods here". **Prince** commented that salt was a major ingredient in Virgin Islands cooking and she stated:

> I think a lot of it is the custom of it. Everything is an acquired taste. Sometimes you drink something you eat something for the first time and say yuck. But you try it again and you know this is not so bad. And then you try it again and you find that you really actually like it. It depends on the person. I cut back on my salt intake a long time ago. Because I used to cook… with a lot of salt, then I started cooking for a friend they were hypertensive I was not. So I started to cook cutting back on the salt because of them. And I'm glad that I did because it turns round to help me. Now if I am cooking I use a lot of garlic a lot of onion and you know you use those types of seasoning. It makes the food taste good so you don't miss the amount of salt. As a matter of fact if I eat something that's a little too salt I can…it's a big difference for me now.

Zaida and **Bernice** both agreed that "high seasoning" was a strong component in Virgin Islands cooking and agreed with comments made by **Prince**.

Financing

The participants of the focus group discussed the impact of the economy on hypertension management in the USVI. They all agreed that the state of the economy is of great concern for all the persons living on the Islands the participants talked about the stress inflicted by the economy as a source of high stress that significantly impacts long term sustainability and overall self-care. The group participants discussed the lack of accessibility to effective disease management due to cost. The study participants verbalized decreased access to healthy foods due to cost. **Bernice** talked about the high cost of food on the Islands and she compared this to Stateside. She relayed:

> The cost of food here is very high. Some places are higher than others and some places raise the prices all the time. Fruits and vegetables are very expensive whether you go to the market or you go to the supermarket it is very hard to buy them all the time. The frozen is less expensive but it's still expensive… they raise the price and then tell you it's on sale, but it's not. For you to eat good you have to buy it, but only the people with the food stamps can afford some of those things. When I am in the states and I see the price of food, the amount of food that you get for the money, I am shocked, chicken is so cheap… I want to bring it back here so that I don't have to buy it here… I guess you can't compare the states to the Virgin Islands but you can't help it.

Prince thought that the state of the economy had a lot to do with the level of stress on the Island, but she also thinks that poor stress management was a great factor contributing to the overall stress levels. She discussed:

> Okay I agree, food prices are high and the economy is not good here. These definitely give a lot of stress. I think the economy has a lot to do with it but I don't think it's just because of the economy that causes all the stress either. I think we do not handle our stresses well. And I'm speaking from experience. I didn't handle my stresses well. And um we take on everything. And you know…the other day the two young boys that got killed…those were my aunt's grandchildren. So all of that is stress. You know…when I heard it first it was "Oh God! Oh God!" and I just keep saying oh God oh God and holding onto the counter. So I know my pressure went up.

The other two group members supported the descriptions giving by **Bernice** and **Prince** by confirm a resounding "yes" when asked if these were challenges that they saw as significantly-impacting adherence to hypertensive management.

The theoretical sample for this study was comprised of the focus group and the five additional individual interviewees all of these provided the researcher with valuable insight that helped to formulate the social process of deciding. All aspects of health care decision-making can prove to be varied by many intricate components. These components are sometimes connected, especially when it pertains to a particular cultural group. All the categories and subcategories that emerged during this study proved to be essential components of medical decision making for this group. The social process of deciding cultivated by the researcher's analysis of the data was supported by the interview results from the theoretical sample.

The Basic Social Process of Deciding

Deciding*, ** or decision-making is a crucial aspect of healthcare success in all patient populations. When evaluating any group, it is critical to examine the components of social structure that may impact the ideals and dictate certain behavioral norms that impact overall outcomes. Societal characteristics, patterns and relationships can dictate the integral and pivotal steps that propel individuals of any group to make decisions and then take action as it relates to health and wellness. Five major categories emerged from this study evaluated that evaluated the critical factors that contribute to adherence to therapeutic medical regimen among persons from the United States Virgin Islands. The major categories ***mistrusting, reacting, educating, socializing and ***financing*** were conceptualized and with the support of the subcategories ***perceived lack of provider caring, perceived lack of provider cultural sensitivity, perceived lack of adequate provider credentialing, perceived inflation of healthcare cost, fear of complications, symptom-based management, denying, relying, owing, defying, dietary influences, use of herbal remedies, strong sense of spiritually, healthy eating, purchasing medications*** and ***long-term sustainability***. These were later theoretically conceptualized and formulized and ultimately induced the basic

social process ***deciding***. The basic social process in Grounded Theory is that process that permeates the core of the behavioral pattern and is instrumental to the innate aspects that constitute a social structure (Glaser, 2005). ***Deciding*** is the pervasive process that is formalized in this study and it represents the most ubiquitous process that contributes to or deter adherence to therapeutic medical management among the hypertensive United States Virgin Islander.

Restatement of Research Question

1. What are the critical factors that influence therapeutic adherence in the hypertensive US Virgin Islander?
2. What are the attitudes, behaviors and beliefs of the US Virgin Islander that directly or indirectly influence adherence to hypertensive therapeutic measures.
3. What are the critical factors of the social structure of the United States Virgin Islands that influence adherence to hypertensive medical therapeutic regimens?

Connection to Theory

Analysis of the data yielded five major categories that culminated from the participants' voices and converged disjointed spears of a social structure that ultimately spews influential responses that dictates action. The participants revealed several factors that influence their wiliness to be adherent to therapeutic hypertensive management. These factors although divulged as distinct entities possessed a connectedness that erupts beyond the surface. The categories of ***mistrusting, reacting, educating, socializing*** and ***financing*** are fundamental constituents ultimately influencing adherence behavior among hypertensive individuals in this population. The participants expressed their identification with ***socializing*** as cultural norms as influences their dietary habits and their perceptions of illness, wellness and beneficial treatment. They gave detailed inferences on how lack adequate ***financing*** affects day-to-day decisions that influence

overall blood pressure management. The participants voiced constituents of ***mistrusting*** based on a perception of professional inadequacies and deception on the part of the healthcare providers. Lack of adequate ***educating*** as a direct deterring component of adequate management presents a concurrent factor. Their descriptions relayed ***reacting*** as reflexive responses to care that directly impact their day-to-day decisions related to management of their blood pressure. The core conceptual category of ***deciding*** erupted as the basic social process serving as the core behavioral component ultimately influencing all categories impacting therapeutic medical adherence in the hypertensive United States Virgin Islander.

Figure 5 depicts the social process of ***deciding***.

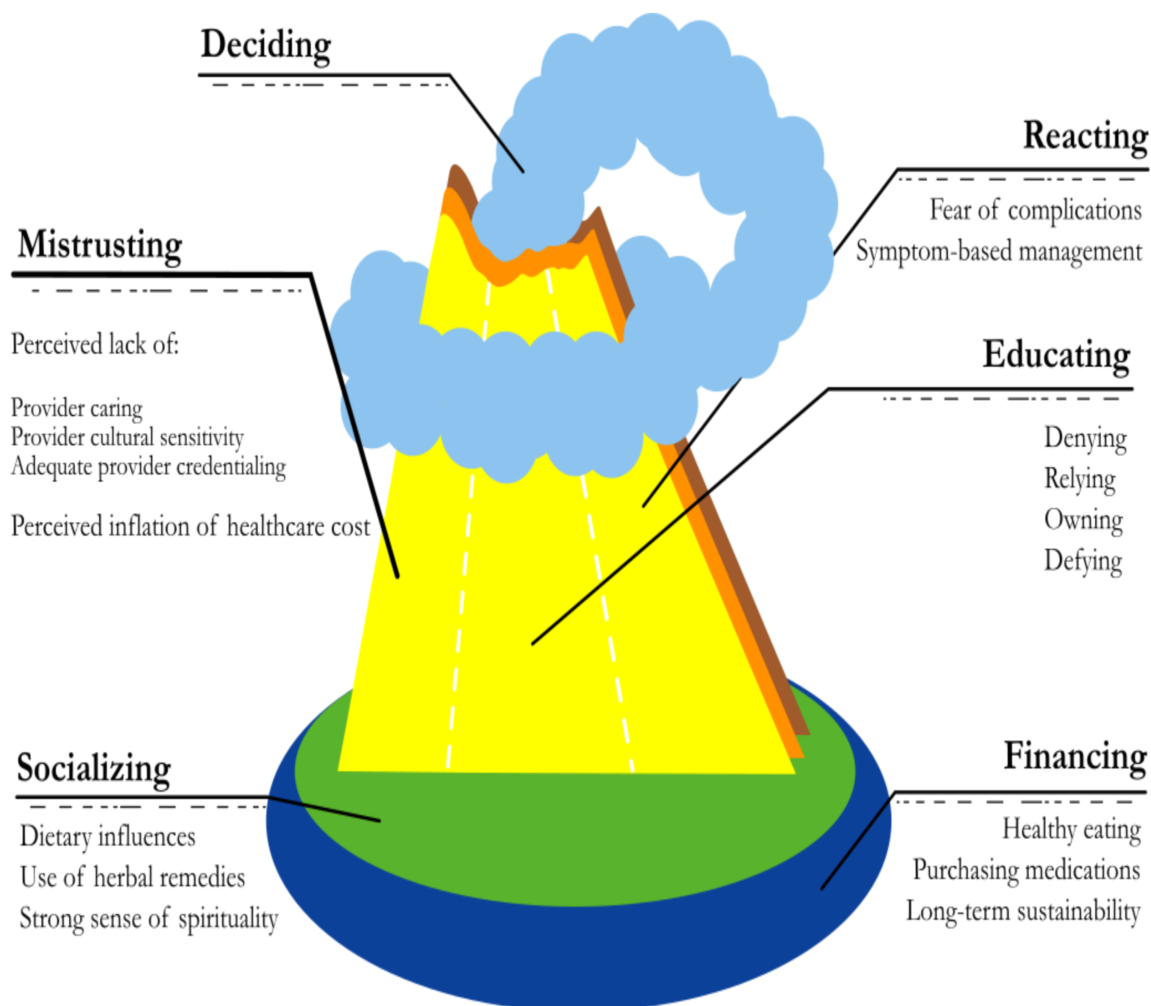

Figure 5. Conceptual model of Deciding (Morton, 2016)

The model describes the process of deciding as it influences therapeutic medical adherence among the hypertensive populations in United States Virgin Islands. The influential aspects of adherence consist in the five main categories ***mistrusting, educating, reacting, socializing*** and ***financing***. Each of these categories has subcategories that substantiate the data and aid in providing vivid descriptors that lend to the overall message relayed about the phenomenon by the researcher. ***Deciding*** is the social process that emerged from the data analysis as the most active and relevant process-influencing adherence to therapeutic medical

regimen among hypertensive population from the United States Virgin Islands. A volcano is used to depict this process with ***deciding*** indicated in the smoke to depict the essential and astounding impact it has on the overall process of therapeutic adherence in this population. ***Deciding*** answers the general question of what influences adherence in this population. The volcano itself depicts a process of actions occurring in no fashion but once occurs has a significant impact. Volcanoes are vents through which molten rock (lava) escapes because of a rupture in earth's crust. An action in the earth's structure sets off a cascade of events that causes the buildup of gasses in the volcano to cause an eruption. The mountain that holds the volcano serves as a structure that could be taken apart by the volcano, but acts as a needed compartment.

As previously expressed, the social process or the core category, which emerged as providing the overall explanation as to what prompts the healthcare behavior of adherence as it pertains to therapeutic medical management in the hypertensive United States Virgin Islander is ***deciding. Deciding*** is depicted at the core of the smoke coming from the volcano indicating its role as the summation of the active process at the core of the phenomenon in question. ***Socializing*** is at the base of the mountain indicating its influence on all the other processes. The way care is perceived and received is strongly predisposed by cultural norm therefore culture will inadvertently impact the all aspects of health-related behaviors. ***Financing*** is also at the base but encases ***socializing*** as synonymous with the participant's voices that indicate lack of financial structure as a debilitating factor decreasing long-term sustainability and contributing to poor outcome. The mountain is divided into three other emergent categories; ***mistrusting,*** ***educating***, and ***reacting***. These represent the shell of the volcano, as they make up the supporting structure. This support impacts the fundamental activity at the core of the volcanic process. ***Educating*** is in the middle of the volcanic structure with open lines separating each category.

Placing educating in the middle indicates the interrelation between educating and mistrusting and educating and reacting. Lack of appropriate education can lead to both ***mistrusting*** and ***reacting*** behavior. ***Reacting***, ***educating*** and ***mistrusting*** project up off of **s*ocializing*** and ***financing*** to show these as a foundational influence on these three categories. The reengagement of the volcanic smoke with the mountain indicates the constant reengagement of these factors with the population as they engage and reengage in adherence behavior.

Deciding is the basic social process that substantiates the phenomenon of adherence to therapeutic medical management among the hypertensive United States Virgin Islander. Adherence for the hypertensive United States Virgin Islander is influenced by ***mistrusting, reacting, educating, socializing*** and ***financing***. However, the decision must be made to allow the impact of these to deter or foster adherence. ***Deciding*** is an active process and is consciously embraced by the individual in order to produce a desired result. This category impacts the process of adherence as it leads the people to ***deciding*** the bases of their disease management. **D*eciding,*** therefore, is the resultant behavior influenced by these categories as the most dynamic and formative process that propagates adherence behavior among the researched population in this study

Chapter Summary

Chapter four provided the results of the inquiry. The demographic information for both the individual and the focus group participants in the study were presented in both summative and descriptive formats. The emerging categories of ***mistrusting, reacting, educating, socializing*** and ***financing*** were all discussed, these were substantiated by the subcategories ***perceived lack of provider caring, provider cultural sensitivity, perceived lack of adequate provider credentialing, perceived inflation of healthcare cost, fear of complications symptom-***

based management, denying, relying, owing, defying, dietary influences, use of herbal remedies, strong sense of spiritually, healthy eating, purchasing medications and ***long-term sustainability*** with supporting data that echoed from the voices of the participants. The basic social process of ***deciding*** was presented in both pictorial and descriptive presentation formats.

CHAPTER FIVE

DISCUSSION AND CONCLUSION

The purpose of this study is to explore the various factors that may influence hypertensive therapeutic adherence practices of the hypertensive United States Virgin Islander as it relates to hypertension management. The researcher also attempted to identify the US Virgin Islanders' basic understanding of the disease process and of the therapies used in treatment. The researcher inductively derived at the basic social process of ***deciding*** relaying this as the most fundamental process that depicts this research phenomenon of therapeutic medical adherence in the hypertensive person from this region. The overall objective of this study is to develop a body of knowledge surrounding this phenomenon that can charge healthcare practitioners and invested stakeholders to identify areas of hypertensive management that requires more detailed attention.

This data may help to optimize management of this most prominent disease process for this and like populations. There is a significant lack of adequate scientific data to delineate the identified phenomenon. The absence of an adequate contextual framework for a scientific discourse on the factors contributing to adherence to hypertensive therapeutic regimen among the United States Virgin Islander signifies a lack of adequate understanding of the barriers that impede optimal management. Data analysis procedures articulated by Strauss and Corbin's Grounded Theory process yielded five major categories; ***mistrusting, reacting, educating, socializing*** and ***financing*** these were supported by 16 subcategories: ***perceived lack of provider caring, provider cultural sensitivity, perceived lack of adequate provider credentialing, perceived inflation of healthcare cost, fear of complications symptom-based management, denying, relying, owing, defying, dietary influences, use of herbal remedies, strong sense of***

spiritually, healthy eating purchasing medications *and* ***long-term sustainability****,* These all gave way to the finite core category of ***deciding****,* which serves as the central phenomenon describing the social behavior of adherence among this population. This chapter serves to define the themes and social process while concurrently integrating them to show causal relationship and incorporate current related literature to solidify, reinforce and demonstrate scholarship. Chapter Five will also discuss the research significance and its scope and limitations.

Explanation of Meaning

The philosophical underpinnings of symbolic interactionism and pragmatism are the philosophical bases of Grounded Theory research and were used to inform this study. Symbolic interactionism as delineated by Herbert Blumer has three premises; the first premise is that a human being's response toward any certain object, place, person or phenomenon is based on the meaning they derive from it. The second premise asserts that meaning for objects, places, person or phenomena is derived from the cultural interpretation and meaning given to it. The third premise of symbolic interactionism is that meaning is directed by individual interpretation (Blumer, 1998). In this study, the participants described their meaning of illness, wellness and effective treatment. Their explanations stemmed from their personal experiences. The ways in which individuals handled their hypertension management were based on their interpretations of what hypertension was and how they felt it impacted them overall. Several of the participants who viewed hypertension as a serious illness asserted that they adhered to their regimen religiously. Those who viewed the medical therapy as an integral aspect of their ability to sustain life asserted their wiliness to adhere strictly to these regimens. The opposite held true for those with opposing views; participants who viewed medications as toxic and deleterious over time

were more likely to stop taking their medications. Those who viewed herbal remedies as efficacious incorporated these, based on cultural implications of efficacy.

The theoretical principles of symbolic interactionism are evident with the participants engaging in health-related behaviors based on the symbolic meaning and social relevance of the disease and its treatment. The theoretical perspectives of symbolic interactionism in this Grounded Theory study allowed for the discernment of the meaning regarding adherence to therapeutic medical management among hypertensive persons from United States Virgin Islands. The analytic process using Strauss and Corbin's systematic Grounded Theory method yielded the emergent categories of ***mistrusting, reacting, educating, socializing*** and ***financing***. Further analytical process yielded the core category of ***deciding*** as the ultimate social process offering explanation of this phenomenon.

Pragmatism in Grounded Theory stresses the practicality and applicability of theory (Brayant, 2009). Truth as delineated by pragmatism is not deductive, but rather inductive with constant scientific verification (Wuest, 2012). Truth is relative to time and place and is therefore an interactive process that considers the social structure of involved individuals (Wuest, 2012). The theoretical perspectives of pragmatism embodied in this study dictate the feasibility and practicality of the theoretical perspective of ***deciding***. The participants expressed truth through interaction with their environment; the social structure played an important part in interpretation of health, wellness and disease management. They shared information regarding their hypertensive management that associated with accepted social norms. The social process of ***deciding*** was inductively derived during the analytic process and provides a solid theoretical structure that details realistic applicability for this study's phenomenon. ***Deciding*** serves as the

core category that amply designates the perilous dynamics that affect therapeutic medical adherence in the hypertensive population from the United States Virgin Islands.

The theoretical model of ***deciding*** depicts the active process that predicts the surge of movement or action as it relates to adherence-related behaviors in the hypertensive population from this territory. The categories formulated in this model are reflective of, and may be connected to, the theoretical perspectives of the Health Belief Model, the Theory of Planned Behavior, the Theory of Reasoned Action, and the Social Learning Theory. These theories are each cognitive behavioral-type theories that conceptualize how social, environmental and personal factors affect individual decision making capacities as it relates to the health and wellbeing of the patient (Romas and Sharma, 2008). The core category of ***deciding*** like these theoretical perspectives highlights factors that were deemed essential for United States Virgin Islanders to engage in behavior that propagates adherent behavior**. *Educating, mistrusting, reacting, socializing*** and ***financing*** are the dimension the conceptual model of ***deciding*** that deduces social, environmental and personal behavioral characteristic which, are instrumental components that informs choices leading to acceptance of instituted hypertensive care regimen by the United States Virgin Islander. The 16 subcategories ***perceived lack of provider, provider cultural sensitivity, perceived lack of adequate provider credentialing, perceived inflation of healthcare cost, fear of complications symptom-based management, denying, relying, owing, defying, dietary influences, use of herbal remedies, strong sense of spiritually, healthy eating purchasing medications*** and ***long-term sustainability,*** support this description and provide rich data that undoubtedly authenticates and validates ***deciding*** as the most ardent process depicting adherence-type behavior in the hypertensive population from this region.

Interpretation of the Findings

The purpose for this study was to bridge the educational gap, as it existed with regards to health care-related behaviors of the hypertensive population from the United States Virgin Islands. This study concluded that there is a high-level of non-adherence among people of this population as it pertains to hypertension management. When reviewing the demographic evidence, 81% of the study population admitted to eliminating their blood pressure medications at some point; 33% reported this as deliberate, while others attributed this to forgetting. Only 8% of the participants related this as due to lack of ability to purchase medications. The factors dictating adherent or non-adherent behaviors in this population are multifaceted; however, social, psychosocial, environmental and personal constituents influence the basis of these behaviors.

The data analysis in this study yielded five main categories as integrally afflicting factors perpetuating adherence type behaviors. These factors emerged as: ***educating, mistrusting, reacting, socializing*** and ***financing*** as instrumental to the process of inducing the theoretical perspective on adherence behaviors constituting 16 subcategories***: perceived lack of provider caring, provider cultural sensitivity, perceived lack of adequate provider credentialing, perceived inflation of healthcare cost, fear of complications symptom-based management, denying, relying, owing, defying, dietary influences, use of herbal remedies, strong sense of spiritually, healthy eating purchasing medications*** and ***long-term sustainability.*** Final theoretical analysis revealed the core category of ***deciding*** as the most summative and dynamic process dictating healthcare behaviors among this population as it relates to hypertension adherence. The following paragraphs will present the findings of this study with supporting literature and dialogue from the participants.

Mistrusting

Mistrusting was one of the major categories that emerged from the data as an influential aspect of adherence behavior. Analysis of the data showed that ***mistrusting*** in this realm has both social and personal connotations. The participants reflected on personal and environmental factors leading to their feelings of neglect, violation, deception, exploitation and extortion by the healthcare industry in the United States Virgin Islands. The participants discussed a perceived lack of caring on the part of the health care provider. Many relayed inferences in a healthcare situation by which they felt that their needs were not met, or they received less than optimum care outcomes. Participants also discussed perceived instances of deception when they referred to their perceptions of practicing physicians who migrated to the Islands without adequate credentials. They made inferences to escalated healthcare costs and inappropriate billing. These were all factors that avidly attributed to ***mistrusting***; however, the most significant aspect of ***mistrusting*** arose from provider lack of caring. Lack of caring was also entangled with perceptions of cultural insensitivity. The participants who thought their healthcare provider cared about them, were the ones who talked about having a relationship with the physician in which he/she acknowledged them and interacted with them in a friendly manner. They associated caring with the provider being personable and engaging. **Agnes** was one of the participants who said she preferred to see the PA than the doctor in her primary care clinic. Her statement regarding why is as follows:

> I guess maybe it's the level of comfort where when the PA walks in and greets you by your name and asks you how you are doing, how things were from the last visit to how you are now. What brought you here? So I feel like I get my money's worth. Where when I go to the doctor its like "Okay so you did this test. We have the results. Everything is

fine. You have medicine? You need a refill? We will see you next month." Even if I ask questions he is just going to answer them and that's it………..but you don't really necessarily ask me how I'm doing on the medication like the PA.

Jasmine Guy referred to caring as her physician being engaged, open and understanding to her and her Virgin Island culture. She expressed frustration and lack of confidence in the ability to confide in her healthcare providers who did not recognize her culture. **Jasmine Guy** expressed having a suboptimal relationship with her primary care practitioner, but expressed a great relationship with her OBGYN who is culturally-astute and open to the use of non-traditional remedies of care. She expressed that it would be ideal if all her healthcare practitioners were culturally-astute and open to incorporating non-scientific types of treatment regimens in her care regimen. **Jasmine Guy** relayed:

> The general practitioner no! My OBGYN yes…. I can tell her anything and I can ask her anything and she's you know she gives you information on such and such… but usually when you're in there you don't really think about my high blood pressure. But if I needed to I can ask and I can tell her anything, and she has no problems about you using different stuff to try to help you. She's island too so she understands. My primary care scientific medication and that's it (only engages in the use of scientific means of treatment). That's what they know. That's what they prescribe. That's it.

Participants seem to have the perception that the physicians who migrated to the Virgin Islands had a less than optimal opinion of the people and the culture, which also led to negative perceptions. **Lisa** stated, "They come with the attitude it's a third world and you know you can tell these people anything, pick the idiots off the tree and you know, shave them down and teach

them how to speak and that attitude". **Donika** saw many practitioners who are not of the culture as problematic. She stated:

> If you go inside the hospital, there is like probably 3% of island doctors. Everybody else is from the States. Everybody else is from abroad and a hospital has about probably 16 nurses from the islands, and I have been in a hospital a lot just going to it up and down and just seeing, observing, and there's like 16 nurses from the islands, and the rest . . . and they have over 300 and something nurses in the hospital.

Caring in this culture is obviously regarded an integral component of a satisfactory practitioner client relationship and it goes beyond making sure the disease process is managed adequately. It is not efficiency and effectiveness of prescribed regimen; rather, the participants expect a holistic approach, which incorporates not just the physical needs related to their disease, but the social and psychosocial components as well. The perceived lack of caring by participants undeniably acts as a catalyst for ***mistrusting*** in persons from the United States Virgin Islands culture, which creates a gap in communication that ultimately fosters a suboptimal practitioner/patient relationship. There are currently many studies that emphasize the role of interpersonal communication and building trust among patients. Studies by Sheppard, Williams,Wang,Shavers, and Mandelblatt (2014), Trojan and Yonge (1993) and Sheppard, Zambrana and O'Marlley (2004) all concluded that better patient-provider communication was influential in building trust and therefore fostering more productive and functional care outcomes. Schoenthaler, Allegrante, Chaplin, and Ogedegbe, (2012) evaluated the effect of patient-provider communication on adherence in race-discordant versus race-concordant relationships. The study concludes that race-discordant relationships that fostered good patient/provider communication were associated with better adherence among this population,

emphasizing that good provider communication was a greater facilitator for adherence among African-American populations.

Cultural sensitivity has also been documented in the literature as directly related to increase trust. Tucker, Moradi, Wall and Nghiem (2014) in their study showed that cultural sensitivity (perceived provider competence/confidence, sensitivity/interpersonal skill and respect/communication) had an unswerving positive relationship with provider trust. Studies by Tucker, Lopez, Campbell, Marsiske, Daly, Nghiem, Rahim-Williams, Jones, Hariton and Patel (2014) and Cheney and Cheromcha (2011) both showed a direct correlation with provider cultural sensitivity and improvement in patient healthcare outcomes. Eze (2011) in her study showed a direct correlation between cultural sensitivity and adherence among the African-American population with hypertension.

Healthcare ***mistrusting*** is well represented in the literature especially with the African-American population as a deterring factor for optimal adherence. Trust has been implicated as a vital component of successful client/practitioner relationship. There are many studies that show a direct correlation with healthcare mistrust and non-adherence in the hypertensive African-American patient. These inferences are applicable here, especially since 90.1% of this study population reported race/ethnicity asblack or African-American. Some participants expressed strong suspicion of physicians who were not local. Cuffee, Hargraves, Rosal, Briesacher, Schoenthaler, Person, Hullett and Allison (2013) evaluated trust in physicians and medication adherence among inner city African- Americans with hypertension. Their study concluded that there is an association between racial discrimination and adherence with trust being the most significant variable leading to non-adherence in this type of scenario. The data analysis revealed a 1-point increase in adherence when trust was introduced as a mediator. Trust increased the

cumulative odds of being in better medication adherence category by 4% (OR=1.04; 95% CI=1.02, 1.06) with adjusting for perceived discrimination and other covariates. Trust explained 39% (95% CI=17%, 100%) of the association between discrimination and medical adherence making trust a more significant variable in fostering medication adherence than even discrimination. This study concluded that fostering greater trust is a great catalyst for increasing treatment-adherence in persons with chronic diseases such as hypertension. Dale, Bogart, Wagner, Galvan and Klein (2016) in their study on adherence in African-American men with HIV, concluded that patients who had general medical ***mistrusting*** were more likely to be non-adherent to antiretroviral treatments. Mistrust in this study was also more of an adherence-deterring factor than discrimination. In this study mistrust was assessed on three separate visit occasions, general mistrust (*M* (SD) =2.66 (0.58)) and racism-related mistrust (*M* (SD) =2.59 (0.62)). Electronic monitored medical adherence (0%-100%) was low among participants at 3 months (*M* (SD) =60.8% (33.5) and 6 months (*M* (SD) = 60.1% (33.6%)).

The data shows ***mistrusting*** as a significant factor attributing to lack of adherence. The factors that foster mistrust can vary however among African Americans or Blacks mistrust in the medical system is significant and likely stems back to historical events leading to the demoralizing and violation of human rights by people in the healthcare arena. The participants in this study expressed fears of misdiagnosis based on perceptions of the usage of unqualified personnel. **Prince,** a participant in the focus group interview made this statement:

> Our government here don’t…they don’t do their homework when they hiring. When they hiring you as a local some local people they scrutinize you know but when they bringing people in…

Bernice agreed with **Prince** and added, “Some of them just come with false statements. They say they are doctors and they are not”. Several of the participants had very negative perceptions of the care provided by health care providers on the islands agreeing that they were more interested in financial gain rather than the overall wellbeing of the patients. **Lisa** stated, “to me they're not really in it to help you, they're in it to make money, so they keep stuffing you with this pill, this pill, if that don't work try another one”, her sentiments were echoed by other participants who shared the same opinion. These perceptions foster feelings of deception and exploitation and cause participants to seek alternative means of care that may not be optimal.

An integrative review conducted by Murray and McCrone (2014) evaluated factors that foster provider trust in a patient-provider relationship. The authors evaluated 47 (13 conceptual, 28 empirical, 6 methodological) publications obtained through exhaustive searches through CINAHL, MEDLINE and PsycArticles using the primary term “trust”. Evaluation of these studies yielded many variables instrumental in fostering this trust relationship between the patient and provider. The authors concluded that a new conceptual definition of provider trust should be established with interpersonal and technical skills, moral comportment and vigilance as core-provider qualities. These were most consistently identified throughout the literature as significant in promoting trust behaviors. These qualities of provider trust proved to be of significant relevance in this study; void of these qualities among healthcare providers in this community were identified as precursors for fostering mistrusting and inadvertently leading to overall poor hypertensive management.

Reacting

Hypertension in this population is prominent; however, although most participants regarded it as a serious condition, they did not look at it as a disease. They did not consider

themselves at risk unless symptoms were present; without symptoms, there is a high propensity to neglect adequate management. Care for hypertension in this population is not proactive but rather reactive. Most participants did not find it necessary to see a healthcare provider unless they had symptoms of an illness, leaving most diagnoses of hypertension occurring when it is already at dangerously high levels and medication intervention is then initiated immediately. Although most of the participants referred to their hypertension as likely hereditary, none discussed taking precautions to prevent the disease; rather, they implemented life-style changes after they were diagnosed. Some participants referred to the disease as a silent killer, but still admitted to relying on symptom presentation as an indicator to check their blood pressure reading and sometimes even to take their medications.

The participants often tried to associate hypertension with a factor they could control, or non-biomedical factors (external factors). They often believed that once these factors were eliminated, then the disease was controlled and was therefore not threatening, meaning they did not need to continue to engage in disease management behaviors. Care of blood pressure is then stimulus-driven, indicating a reactive, rather than proactive, care management regimen. The associations of controllable factors to hypertension allowed participants to have a sense of termination of the disease process, which makes the disease appear less serious to them.

The most prominent non-biomedical causative factor of hypertension noted in this population was the association of stress. Several participants referred to the stressors of the economy and other environmental factors in the Virgin Islands as causative factors for their blood pressure. They considered the alleviation of stress as a curative constituent in hypertension management. Although these participants acknowledged hypertension as a problem, they thought of it as a more episodic or periodic occurrence that could be controlled by stress reduction.

Valerie associated her elevated blood pressure with stress. She reported that she does not check her blood pressure readings as much as she did in the past, because her level of stress has decreased. **Valerie** stated:

> I do check it (referring to her blood pressure) but not every day… If I felt like… when I used to be stressed a lot, I used to check it but now I don't think I am so stressed anymore… I am... I am doing better. So…. I don't check it as often… I check it but not as often, maybe once every two weeks now I used to check it sometimes every day or at least once a week but sometimes 2 weeks pass by and I don't check it.

The association of the disease with stress seems to give the participants a sense of hope that they are getting better and may not have to continue their hypertensive management. **Prince** also associated her disease to stress and viewed resolution of stress as a consent to eliminate medication management from her care regimen. She stated:

> A lot of my problem was the stress and he (referring to her physician) made me stay home because the job was so stressful it was. And then one day I started to feel so terrible they had to take me to the doctor and that's when I was told I'm hypertensive. And um the one thing that stood out in my mind that that doctor said to me is…because I asked the question… "When can I come off of this medication?" and it's like "yeah you come off medication hmmum something…something" and "um yeah don't take your medication until you all stroke out". That's what he said to me. And I didn't like that too much because I feel that you can control some of your sickness. If you alter your behavior change and you're eating habits, you exercising more you avoid as much stress as possible. I feel that some of us… and I'm not saying everybody…some people can change. So…but they don't want to give you that option. Most of these doctors just want

> you to stay on pharmaceutical forever. And they are telling you once you come on you can’t get off. I personally don’t agree with that.

Lisa expressed that having high blood pressure and having stress is often considered synonymous among Virgin Islanders. She explained that sometimes when individuals are referring to stress they often call it “pressure” and expressed that this is a very common interchanging of terminology among locals:

> They're talking about pressure, stress…and that pressure your body is going through these changes, everybody, and you know, we use the term so loosely, we all get pressure. Not meaning that they sick with the disease but that they're stressed out.

Mr. Indian considers his high blood pressure a mental thing and relates it to stress. He indicated in his interview that when his stress level is reduced then his blood pressure is not elevated. He refers to stress reduction measures as avenues to lower his blood pressure. He stated:

> When I don't have the aggravation of the daily grind of work and the stress that comes along with it... I am in a different zone so my mind is more at ease. Occasionally I take myself for a walk and my mind is a lot more at ease, but it is more of a mental thing…with the pressure going up as far as stress is concerned….

A study completed by the CDC (1990) evaluated health beliefs and compliance with prescribed medications for hypertension among black women. The study concluded that women who had non-biomedical beliefs regarding hypertension (referring to stress related causes or “hot blood”) were much more likely to be none-adherent with antihypertensive management. There were 32 students in this study who had non-biomedical beliefs regarding hypertension, while 22 of the study population had biomedical belief regarding hypertension. Of the participants with non-biomedical belief, 63% had poor adherence to antihypertensive regimen, in contrast of the

27% of those with biomedical beliefs (relative risk = 2.3; 95% confidence interval *[CI] =1.2-4.4).* Hypertensive patients with non-biomedical beliefs are more likely to be reactive in their hypertensive management, taking medications or engaging in management only when symptoms are present. Hekler, Lambert, Leventhal, Leventhal, Jahn and Contrada (2008) in their study also evaluated hypertensive management behaviors based on belief and concluded that patients who believed in biomedical causes of hypertension were more prone to engage in lifestyle-changing behaviors, which positively affected BP. The route connecting biomedical beliefs and systolic blood pressure was statistically significant *CI=-6.51 to CI=-0.23*. Perceived severity of consequences and stress belief model (belief that hypertension is induced by stress) was also analyzed in this study and was found to have a positive association with stress reduction *OR=3.16, CI 1.44-6.94, P< .01 and OR= 0.30, CI 1.01-1.13, P<.05.* These findings were definitely consistent among the population in this study, with participants indicating relatively high levels of inadequate adherence based on their perception of the causes of hypertension. The association of hypertension with stress or non-biomedical factors causes participants to miss their medication doses and it also leads to reactive rather than proactive hypertensive monitoring practices.

Many participants associated being sick with having symptoms. Although they are aware of their hypertension, some do not take their medications as prescribed, nor do they engage in life-style modifying behaviors to regulate their blood pressure unless they have associated symptoms. The association of symptoms with disease is a prominent stimulus for management initiation. **Jasmine Guy** confirmed that hypertensive persons in the US Virgin Islands tend to stop taking their antihypertensive medications when the no longer have symptoms. She stated:

> As we feel better we stop taking it (referring to antihypertensive medications). I do think that it is because a lot of people don't know how serious the disease is or you know are not aware of the consequences that "I feel good today I ain't taking it." That's it. Because I was in the pharmacy field, I know that with certain medications you can't just stop taking, you need to taper off and I do understand that I have an issue now so there is no proven….I guess proven facts that the herbs do cure. You know they may help but I don't like I said I don't want to die. So I'm going to take my medication the way I'm supposed to. Hopefully you know the symptoms that I get from the high blood pressure maybe the herbs will help that but for now I just have to do I guess what the people who went to medical school said I have to do basically.

Agnes referred to having hypertension as "inconvenient" and reports skipping her meds regularly and ignoring elevated readings based on how she feels. She stated:

> "I feel fine. I don't think I have…" And I've had that where it's just like the day for my appointment and I go in yes and they form the time they check the pressure once and they check it again I know… and they say… Miss **Agnes** it's high. And "it's like you're about to have a stroke." No I'm not! I hear that so many times. I've walked in and they say "Your head hurting you? You having some pain?" No. No. And no. "But this pressure you could be having a stroke." No!! And those are the days I feel my best.

It is well noted throughout the literature that the lack of symptoms associated with hypertension and the perceived effects of antihypertensive management in asymptomatic individuals is a prominent attribute to non-adherence (Kelly, McCarty and Sahm 2014, Oqedeqbe, Mancuso and Allegrante 2004, Lee and Jeon, 2008). It is clear that lack of symptoms is a factor that adversely

affects adherence in this study population, and inadvertently leads to reactive type hypertensive management.

Reacting in hypertensive management is a strong attributor to the prevalence of morbidity and motility; however, this type of care is strongly influenced by the way patients view this disease. Franklin, Allen, Pickett, and Peters (2015) conducted a descriptive quantitative cross-sectional study to evaluate the belief system that African- Americans ascribe to hypertension. The study sample consisted of 51 participants with a diagnosis of hypertension. Study results showed that 26 of the 51 participants reportedly experienced hypertensive symptoms. Headache was more frequent N= 15 57%, dizziness N=14 53.8% and visual changes N=4 15.4%. The participants associated this disease with symptoms rather than the disease being caused by their symptoms. The participants in this study who attributed hypertension as causative of their symptoms were more likely to have strong beliefs in their own ability to cure or control their hypertensive symptoms. The participants in this current study had similar convictions, with some taking their medications and initiating management parameters only with the initiation of symptoms they attributed to elevation in their blood pressure.

Several other participants relied heavily on the presentation of symptoms before they checked their blood pressure. They did not regard blood pressure monitoring as a pivotal aspect of care management, but instead referred to its importance as secondary in reference to symptom onset. **Prince** indicated that she stopped taking her blood pressure medications after she felt better, but added that the onset of symptoms prompts her to take her blood pressure readings. She admits to taking her medications based on her readings. **Prince** shared:

> Because my pressure was excellent and I was feeling fine I said okay good. He's not telling me not to take it (referring to her medications) but it's like you know well you

> know you gotta be careful. So I start taking it every other day until I stop take it. But like I said…I got my pressure cuff and if I have to take it I go back on it. I don't have a problem with that. I'm not totally against it but I feel if I could monitor it and control it why should I keep swallowing all this stuff. I know when I have pain here (pointing to head) or any funny pain I rush to my monitor one time to make sure it's not my pressure. You know so I try taking a chance.

Songbird also shared similar sentiments. He reported:

> Last measurements I did, it was just a little bit over, not anything ridiculous, but I haven't monitored it let say for the two months or so I haven't checked it all. But I am a good indicator of my pressure. I know when my pressure is high. I get tense and my shoulders get tense and I get a little lightheaded . . . not lightheaded but I just could feel like a pressure in my head sometimes. So I know and then I would check it and I say oh yes it's high.

This lack of appropriate monitoring is an accepted norm in this population. Of 21 individual participants and the four focus group participants, 0% of this study population admitted to taking their blood pressure on a daily basis. Although greater than 50% of the study population owned a personal blood pressure machine, they reported using it only at the onset of symptoms, which indicated that their blood pressure was elevated. This method of blood pressure management lead to decreased self-efficacy among participants and fostered a higher level of non-adherence in this population. Systemic review and meta-analysis by Fletcher, Hartman-Boyce, Hinton and McManus (2015) evaluated the effects of self-monitoring on medication-adherence and lifestyle factors. This study showed a small but significant correlation in self-monitoring and medication adherence [SMD = 0.21 (95% CI 0.08-034]). The study conducted by Breaux-Shrophire, Brown,

Pryor, and Maples (2012) also showed a positive correlation between blood pressure self-monitoring, adherence and overall blood pressure control. This data adds credence to the results in this study, indicating lower association with adherence and blood pressure self-management.

Another factor that fosters reactive rather than proactive management behaviors is the lack of adequate preventative care behaviors among the population. Several of the study participants explained having symptoms prompting them to seek medical attention, which resulted in their diagnosis of hypertension. During the focus group interview **Elaine** stated:

> But I think too and a lot of people do not take their pressure regularly either. Yeah a lot of people especially men don't go to a doctor. So people walking around with a high sugar…I mean a high pressure and they don't even know because they're not paying attention to it at all. …. They are considering the sugar more important so they don't even bother to check the pressure.

The likely causative factors contributing to this reactive-type behavior is the lack of appropriate initiatives for health promotion and disease prevention. Proactive preventative care programs that offer continued education and support has been identified in the literature as having positively associated health outcomes in the management of patients with chronic conditions. Studies by Kanter, Martinez, Lindsay, Andrews and Denver (2009) and Hamar, Wells, Gandy, Haaf, Cobreley, Pope and Rula (2010) showed a positive impact on overall disease control after implementing proactive chronic-care management programs. Quantitative experimental study conducted by Truncali, Dumanovsky, Stollman, and Angell (2010), evaluated the effects of KOT (keep on track a community based blood pressure monitoring program. KOT program was based in NY City and was designed to evaluate the impact of a community based BP monitoring program. Data collected over six months. Treatment group received multiple visits BP

monitoring, education and adherence encouragement chi square test categorical data and independent T-Test for continuous data. Study results showed that complete HTN responses improved significantly in the group with multiple visits vs. group with single visit. Complete HTN status responses 90% vs. 79% $p = .02$. Complete medication responses 99% vs. 85% $p < .001$. Results of this study indicate that continuous proactive monitoring and diligent education are independent factors that enhances blood pressure adherence among persons with hypertension.

Educating

Healthcare literacy is an important aspect of care management in chronic diseases. Health care literacy is a direct supporting factor for adequate treatment adherence and overall disease management (Bauer, Schillinger, Parker, Katon, Adler, Adams, Moffet, Karter 2013; McNaughton, Jacobson, and Kripalani 2014 and Apter, Wan, Bender, Rand, Bogen, Bennett, Bryant-Stephens, Roy, Gonzalez, Priolo, Ten Have, and Morales 2013). Successful management of chronic diseases requires active interdependence between patient and healthcare provider. The main goal of healthcare literacy endeavors is to optimize care by fostering self-efficacy in the patient. It is the degree to which patients can access, effectively utilize and comprehend healthcare information (Ingram and Ivanov, 2013). The findings of this study indicate a lack of appropriate healthcare literacy among hypertensive United States Virgin Islanders. Of the 21 individual participants and the four focus group participants who engaged in this study, only a total of five participants indicated receiving what they considered to be adequate education about their disease process and its management at diagnosis. This figure indicates that 80% of this study population were not adequately-informed and therefore lacked pertinent information necessary to make adequate decisions needed to effectively manage their hypertension.

The lack of adequate education about hypertension at diagnosis in this population resulted in some participants embracing commonly-held misconceptions about the disease and its management. Misguided facts about the disease process fosters non-adherence and is a direct culprit leading to poor healthcare outcomes among this group. A study by Wannasirikul, Termsirikulchai, Sujirarat, Benjakul, and Tanasugarn (2016) concluded that healthcare literacy did not only have a unswerving influence on medication adherence, but that it was also seen as an intermediary for adherence among the study population. Study by Gazmararian, Kripalani, Miller, Echt, Ren, and Rask (2006) also indicated a significant relationship between healthcare literacy and adherence. Data analysis indicated a statistically-significant relationship between health literacy and refill adherence (P=0.35). In this current study, the population's lack of adequate healthcare literacy is also concluded to be a serious factor in non-adherence behaviors. The most significant contributors to poor health literacy among this group is a perceived power inequality between practitioner and patient, a result of poor provider communication.

There are known power inequalities that exist between the healthcare provider and the patient in many healthcare settings. Provider dominance exists when the healthcare encounter occurs in a paternalistic fashion. This power imbalance is evident in the healthcare culture in the United States Virgin Islands. The participants in this study relayed provider relationships that were more paternalistic, with the participants taking a less-than-active role in the encounter. The reasoning behind this behavior could have some cultural components, as **Taylor** acknowledged that in the Virgin Islands physicians are held in high regard and because patients revered the physicians, the encounters could be less than optimal. He stated:

> Here in the Virgin Islands that doctor dash period whatever you want to put their title but that D.R. means a lot. In the States, they think of it as a drive down here once they see

> that D. R., I am being honest once they see that Dr. or MD or any other type of abbreviations following oh all of a sudden the change will happen.

Many of the study participants admitted that they did not ask questions of their healthcare provider during their healthcare encounter. Some participants expressed belief that the physician was knowledgeable, and therefore makes the right decisions when it comes to their care; this perception made them feel less-compelled to ask questions. **Prince** affirmed that not asking questions of the healthcare provider is a common occurrence among Virgin Islanders when she said "But that's how a lot of people think they are the doctors, they went to school, they know"**.** **Lisa** confirmed similar sentiments when she stated, "So whatever they give you, you figure okay they're doctors they should know and you know so you don't ask". **Zaida** verbalized that the doctor controls the communication between them and the patient and the patient usually does not have a say. She stated:

> I don't think I was told that…what it was going to do. It was going to help regulate the pressure but I wasn't told if you agree with it or if it's okay with you. That never came in. It's like you need to take this because your pressure is high. It's going to regulate it; it's going to bring it down. So this is your prescription. Fill it.

The examples of patient/provider exchanges described above foster a power imbalance between provider and patient and have been associated with low-health literacy and self-efficacy. Study by Safiya, Geiser, Jacob Arriola, and Kripalani (2009) evaluated healthcare literacy and control in medical encounters. The study concluded that patients who had paternalistic encounters with their healthcare practitioner were more likely to have inadequate healthcare literacy. Forty-five percent of the participants had inadequate healthcare literacy skills: of that, 45%, 57% had paternalistic encounters. The contrast was that of the patients who had marginal

or adequate literacy skills: only 23% had paternalistic encounters this was statistically significant (*P*= 0.06). The power imbalance associated with healthcare encounters among hypertensive Virgin Islanders and their care providers fosters low healthcare literacy and in turn fosters low adherence behaviors.

Hypertension is referred to as the forgotten disease by healthcare institutions such as the World Health Organization and the Center for Disease Control. Hypertension also does not get the necessary emphasis as a life-threatening illness among United States Virgin Islanders. This lack of attention may stem from the perception that hypertension is not as serious a disease as diabetes. Participants endorsed this conception of diabetes as more life threatening, based on the level of highlighting that both diseases received from stakeholders. **Prince** stated:

> I think that's so wrong here. I think um diabetes is more recognized or more talked about or more trainings on it than hypertension. I hear of diabetes classes…the hospitals have a diabetes class. They have a diabetes class at the church. You know I'm hearing all the time whenever I hear about a class it's for diabetes and not blood pressure.

Participants who had both hypertension and diabetes tended to pay more attention to the diabetes and were more likely to monitor their blood sugar and take their diabetic medications than monitor their blood pressure and take their antihypertensive medications. **Myrtle Henry** communicated that she takes care of both her blood pressure and her blood sugar, but that she puts more emphasis on her blood sugar management because she felt this was more important. She stated: "I pay attention to both of them, but the sugar to me is more dangerous…so you gotto (have to) pay to more attention to it". The perception of one condition being more dangerous or requiring more monitoring than the other leads back to inadequate healthcare literacy and definitely fosters inadequate management. Lack of adequate efforts for public awareness of the

disease and its detrimental effects put forth by stakeholders contributes to this misconception and fosters a decreased sense of urgency as it pertains to hypertensive management.

Inadequate healthcare literacy is a stimulus for reactive-type disease management. Lack of knowledge of the disease and the factors it takes to manage it effectively leads the adaptation of accepted misconceptions regarding disease and management. This in turn leads to overall poor decisions about care. Poor management outcomes also potentially foster mistrust, which is observed as a direct stimulus fostering inadequate therapeutic management in hypertension in this population. When patients are not adequately educated on medications and side effects, they are more likely to relate poor outcome to incompetence, which fosters more mistrust. **Elaine** spoke about an encounter that led her to leave the care one of her former healthcare providers. She stated:

> A friend recommended me to Dr…for primary care so I started going to him and then my pressure went sky high. I think I complained about my knee hurting or something and I had to go…I went to the emergency room. My pressure was so extremely high they called him but he was off island. So when he came back and I told him what happened he said it's because of the steroid he gave me why my pressure went so high and out of whack. So for that reason I left Dr…alone and found me another doctor.

In the above scenario **Elaine**'s lack of knowledge about the effects medications that she was given fostered a sense of mistrust in the provider's abilities and a negative outcome. If this participant's healthcare provider had taken the time to explain to her beforehand about the potential blood pressure elevating effects of steroids and given her parameters for monitoring, **Elaine** may not have looked at the experience in such a negative light, had the lack of education from her provider fostered an unfortunate consequence of distrust.

Hypertension affects blacks disproportionately to other races, and blacks are much more likely than these other races to have non-adherence. Hutchison, Warren-Findlow, Dulin, Tapp and Kuhn (2014) in their study show that Blacks are more likely to also have lower health literacy than other races. The descriptive cross-sectional study conducted by Hutchison, Warren-Findlow, Dulin, Tapp and Kuhn (2014) evaluated health literacy and adherence to the DASH diet. Eighty percent of the study participants were Black men aged 55 and had 60% overall obesity. Although the study results did not find any significant correlation between health literacy and adherence to the DASH diet, the results did indicate a significant discrepancy among practices of blacks and whites. Results indicated that compared to white Americans, Black Americans were less likely to adhere to a low-sodium diet at 8.3% versus 34.9%, medication regime 50% vs. 82.1%, less likely to quit smoking 68.0% versus 85.7% and less likely to have adequate health literacy 28.8% vs. 55.8%. These findings are concerning, but also resonate with some of the results found in this current study on a population that is predominantly Black.

Healthcare literacy as represented by the ***educating*** category in this study can therefore be considered a central factor contributing to the overall lack of adequate adherence in this population. Lack of adequate health literacy in this population is multifaceted and potentially attributes to low levels of adherence; not just to medication regimens, but also to the health maintenance practices and inadvertently contributes to high levels of morbidity and mortality among this population as it relates to hypertension. Health literacy also potentially fosters reactive management and mistrust, two strong contributors of suboptimal management in the hypertensive United States Virgin Islander.

Socializing

Ethno cultural influences on society are significant variants that determine how individuals approach health and wellbeing (Purnell and Paulanka 1994). Iwelunnmor, Newsome, and Airhihenbuwa (2014) concluded that proficient and efficient healthcare initiatives are only achieved through implementation of effective public health systems. These are only efficacious if the serious constraints and broader contextual relations of ***socializing*** are adequately assessed and operationalized. The United States Virgin Islander has several influences that constitute his/her culture, and these have significant impacts on the way they view health care and illness in general. The health- related cultural beliefs and practices embraced by this population served as proponents for, and deterrence of,adherence behaviors among hypertensive persons in this population. The perceptual benefits of herbal products, cultural cooking practices, perceptions of illness and spirituality are the most prominent cultural practices embraced by the population that impact adherence practices in this population. The strongest proponent of non-adherence, however, is the use of herbal products to manage blood pressure.

Studies by Wen-Wen, Wallhagen, Froelier, (2007); Wen-Wen, Chi-Tai, Show-Li and Hsin-Tien, (2012) both approached the use of herbal products in hypertensive management among Asian cultures such as Chinese and Taiwanese populations. These studies show a lower percentage of this population use herbal products for blood pressure, although they used these to manage other ailments the findings in this current study regarding the use of herbal remedies for hypertensive management among the hypertensive population from the United States Virgin Islands where a large percentage of the study population admitted to using these products for blood pressure management, are significantly different. A large percentage of the study population admits to using herbal remedies for blood pressure control. The use of herbal

products for medicinal healing is a cultural practice embraced by this population that significantly deters adherence to prescribed hypertensive therapeutic medical regimens. Among the 21 individual participants 57.1% admitted to using methods not prescribed by the healthcare practitioner in place of, or along with, medicines prescribed to treat their blood pressure on a regular basis. Of the 4 focus group participants in Phase Two, 50% admitted to also using methods not prescribed by the healthcare practitioner to control their blood pressure along with, or in place of, prescribed regimens. Of the total study population, 90%, of the participants admitted to using alternative means of blood pressure management at some point during their management after being diagnosed with hypertension. The use of herbal products or "bush medicine" was considered tradition by many of the participants. Most participants who admitted to using these products could not articulate how they worked to control their blood pressure, but believed in the medicinal properties because they heard of success stories told by elders.

Jasmine Guy stated:

> Well my mother and a lot of the older generation they believe in their bush. They believe in herbal care. They tell you all the time, "Back in the day you didn't have medicine and people were living longer and you need to use your herbs and your bush and stuff like that." And if it worked for them, I want to live long too so I'm going to try to do what I can.

The perceived superiority of herbal products over western medicine is significantly prominent among this population and is likely another stimulus that instigates the use of these products among the Virgin Islands population. Many of the participants discussed the perceived non-toxic effects associated with the herbs vs. the perceived toxic effects and potential for detrimental interactions associated with western traditional medications. This perception of

toxicity and potential for interaction is a very potent deterrent for the use of these medications for this population. The superior safety and efficacy perception of the herbs instills a level of comfort and offers sense of security that continues to promote its use among hypertensive persons of this population. During the interview, **Mr. Indian** discussed his preference of management for his blood pressure as far as western medicine and herbal medicine his response is as follows:

> I would choose the bush tea because it makes me feel different, because it has fewer side effects. Because once you coordinate your teas or your bush medicine you don't have those side effects as you do if you use western medicine.

Most of the participants perceived that the fact that the herbs came from nature made them safe, as opposed to tablets, which were man-made. Several participants gave names of several leaves that were used traditionally to treat blood pressure. They referred to the *moringa* plant as the “tree of life”; many participants talked about its healing properties. **Mr. Indian** reported that his pills were used to alleviate a medical flare, but that his herbs were what he used to sustain himself and keep his chronic illnesses under control. He stated:

> I do take it you know, not that I refuse, I do take it but I don't keep a long stretch with it. I just take it to alleviate the situation. Even with my respiratory medicine I do have an asthma condition when the puffer doesn't work I go boil some marijuana leaf and go make tea with it and that works for 1 week at least, I don't smoke it I don't use the bunts, I don't use enhanced plants from America I use the natural leaves with the chlorophyll and that works for me the asthma gets… I still keep my puffer with me, if I need a quick fix I do a quick fix and then later I get my tea last 3 or 4 days at least, now when the weather

changes seasonally by Christmas time I do more marijuana leaf tea than during the summer months because the air is dryer during the summer months.

The picture below was taken from a display made by study participant **Mr. Indian** to show some of the plants used locally for their medicinal properties

Figure 6: a photograph of selected herbs by Mr. Indian, (2016)

Eating is a major part of socialization in the Virgin Islands culture. The common way of cooking is to make sure that food was seasoned, as this is associated with taste. **Filbert** noted that it was a custom to have food very seasoned when you cooked in the Virgin Islands; this seasoning ensured that the food was tasty. He stated:

> Well I don't do that now, but everybody, when you come from St Croix. You have to have seasoned food I mean well-seasoned. At 12:00 you get and you put down some fungi and rice and stuffing and all these things and everybody food well-seasoned and so that it taste good you know.

Most participants referred to the sodium constituents of food as a major lifestyle factor that can affect hypertension control. They indicated that food is culturally prepared with high quantities of salt; this is considered flavorful and makes the food more appealing to everyone. Most participants were willing to alter the amount of sodium they put into their food to help manage their blood pressure. This variant of blood pressure management was widely accepted because they associated the attainment of the disease with the use of large volumes of sodium. This verified the previously mentioned acknowledgement that participants were more open to accept

that they have a disease if they could conceive the disease as fixable. The idea that controlling sodium could control their disease was acceptable and they were more willing to attempt these measures, because it was something they could implement that did not require medicines or medical intervention.

A strong sense of spiritualty/ religiosity positively impacts adherence in this population. Most participants who declared a strong association with spirituality and prayer were also more inclined to be adherent to their blood pressure therapeutic regimen. Participants who associated increased stress with deleterious blood pressure outcomes expressed using religion as a source of stress management, which positively impacted their blood pressure. Those who emphasized a strong spiritual or religious base were more accepting of their disease process and expressed more willingness to take medications as prescribed, as well as, engage in other health upholding activities. Even participants who expressed having less than desirable experiences with healthcare providers were still open to seeking medical care and following recommendations proposed by healthcare providers. **Mr. Albert Cadet** expressed that his faith was not in the doctors themselves, but was in the fact that he believed God put the doctor there and gave them the knowledge to heal. He reported believing in the concept of God's power through man. He stated:

> I don't find it hard because this is for my health . . . so . . . if you give me something to follow and I am not doing it, that's means I'm against myself. You see what I'm saying. So, that would be disobedient. This is for my own good, so I have to follow because God put these fellers there for that . . . you know. Let's say for instance if you are sick . . . you have gout and things like that and doctor tell you not to eat pork . . . that it will affect you and you go and eat it that's disobedient, that's why you yourself damaging your own self,

> you know, and things like that, so you have abstain from certain things, because it's not everybody that its good for..........if you're not well and if you said doctor told you certain things are not good to eat . . .well if you believe in doctor, because I believe in him, because God put him there, then you will listen.

Mary Joseph discussed the role of stress management with high blood pressure and prayer. She stated:

> People . . . some people don't know how to manage or how to deal with their problem and so they let is go to their head and eventually turn into high blood pressure. Because in the Virgin Islands, a lot of people don't know . . . I don't know if I'm supposed to say that, but a lot of people don't know how to pray, go down on the knees and pray in front of God. Okay. Because some people just believe they can do everything for themselves. But let me tell you, without God we can't do nothing. We can't do anything. So I pray…

Lisa identified God as a source of strength, who helps her cope with her disease. She mentioned:

> It's very hard to do but you have to ask God for strength and sometimes that helps you through because then once you talk to Him you realize there is a calm that comes over you right away, and you realize okay fine. And that's what . . . I was praying the other day and was asking God. I said, you know, this is just too much. ______ is hung over. How can I deal with it? You know what He said, if you can't deal with this when trials and tribulation come, then you not going to be able to, so right then you know you just calm down because just like everything is a test. You have to be able to go through all of this stuff that's out here.

Although this population expressed a strong connection to a higher power and a reliance on this power for strength and healing, they maintained that they had a strong part to play in their healthcare and healing. **Jasmine Guy** in her interview disclosed:

> I pray every day. I believe in a higher power and I pray for good health but God helps those who help themselves. You can't just pray and leave it there. You have to do something to help yourself. I…ask for more life and I believe that it's granted to me. You know so but like I said I try to that is the center of everything but I feel like I have to help myself too. I can't just pray and ask God to…and then go smoke two packs of cigarette and drink down every bar in St. Croix. I need to do things to help God help me…. basically.

Spirituality and religiosity has been supported in the literature as strong components of care management among people with chronic diseases. Patients with chronic illnesses use spirituality to help them cope with their illness and utilize prayer to help cope with the ailments of the disease. Spirituality has been noted in the literature to positively impact management of chronic ailments (Unantenne, Warren, Canaway, and Manderson, 2013; Shevon Harvey and Cook, 2010; Shevon Harvey, 2005). The literature surrounding spirituality and religiosity in the management of hypertension studies shows a positive relationship with adequate hypertension management and outcomes associated with these factors. Al-Kandari (2003) in his study, showed a positive correlation between lower systolic and diastolic blood pressure and a commitment to religion and religious activities. Brown examined religiosity in hypertension management among African- Americans and found that African-Americans who embraced a greater degree of religious countenance or religious distinctiveness were more likely to exert better control of their blood pressure and could cope with the disease more effectively.

The study conducted by Marshall and Archibald (2015) employs a qualitative naturalistic approach to evaluate the effects of spirituality on health behaviors in an Afro-Caribbean population. The researchers interviewed ten Afro-Caribbean individuals. The results of this study indicated that there is a substantial influence of spirituality on health care behaviors instituted by Afro-Caribbean people. Marshall and Archibald (2015) in their data analysis identified three major factors of their study participant spirituality that contributes to health beliefs of this population; these components were identified as: compassion for service, divine authority and shared responsibility. This researcher was unable to identify any further studies that discussed the role of spirituality in the Afro-Caribbean population. This current study is aligned with the findings of the existing literature, showing a strong positive impact on adherence, coping and hypertension self-care in patients who exert a strong spiritual or religious identity.

Some of the sentiments regarding healthcare management by this study population were highlighted in the 2011 study done by Archibald. In her study Archibald (2011) used a naturalistic approach to discern techniques that could potentially customize healthcare interventions to fit healthcare subgroups to diminish healthcare discrepancies. The researcher used a naturalistic approach and interviewed four individuals who are originally from different Caribbean Islands who had a mean acculturation period of eight years here in the United States. The themes that emerged from this study were: Embracing two cultures, non-entitlement, enduring respect and caring for oneself. The participants discussed the challenges of embracing two cultures. They described three parameters they consider congruent with culturally sensitive care. These were described to mean that the healthcare provider would 1. Introduce his or herself prior to asking patient about their sex life (They voiced a sense of disrespect when providers asked these questions upfront) 2. Treat them with respect, although they sound different

(participants expressed being stigmatized because of their dialect) and lastly they advocated for culturally-astute personnel to deliver healthcare teaching. On caring for oneself, the participants all agreed that they were not “pill takers” and they identified health screening as an attribute of care they learned because of living in the United States, identifying that in the Islands, care is sought only if one is sick and not before.

The Archibald (2011) study supports certain tents regarding health behaviors expressed by the participants in this current study. The concepts regarding pill-taking in the Archibald study were echoed in this current study, validating that this behavioral pattern may be an intrinsic quality of Afro-Caribbean populations such as that of the United States Virgin Islands. The notion of requiring respect with interactions was implicated in this current study and the need for culturally-congruent healthcare instruction was also implicated in this current study.

Haltiwanger (2014) in her pilot study used a pretest/posttest design to evaluate culturally-tailored care as a stimulus to enhance adherence in diabetic Mexican patients. Participants were assigned to three mentee groups and data was gathered at three intervals. Participants completed five self-reported questionnaires and hemoglobin A1C testing was also conducted at their three intervals. Participants showed a statistically significant drop in hemoglobin A1C at the 4 month and 6-month follow-up $p<0.05$, diabetic self-efficacy also showed a statistically significant change $p<0.0005$, Diabetic attitude test was significant at $p<0.0001$ and diabetic empowerment scores also showed a statistically significant increase $p<. 0005$.

Results from this study indicate that culturally-considerate mentoring has a significant positive effect on overall adherence, literacy and self-efficacy in management of chronic disease and could potentially have the same effect on hypertension management in various populations. This literature supports the notion that culturally- congruent teaching from culturally-competent

personnel may be the most efficacious way of reaching culturally-dynamic populations. The hypertensive population from the United States Virgin Islands has strong social determinants of care and can therefore likely benefit from culturally-inclusive care regimens.

This current study highlights that there are readily identifiable social implications that can adversely impact healthcare in the United States Virgin Islands hypertensive population when not addressed upfront. The belief in herbal remedies and the implementation of non-traditional methods of care are strongly embraced in this culture, and fosters non-adherence to regimes that have been proven scientifically-efficacious. The current literature highlighted here supports the notion that social and environmental factors can significantly impact care, and asserts that attention to these could improve care management outcomes on a large scale. The need for the exploration of culturally- effective care interventions in this population are apparent and could serve as strong catalyst for stimulating care management that could enhance management of hypertension overall. ***Socializing*** can significantly impact care regimens and must be considered in formulation of plans of care in this population.

Financing

Adherence to any type of therapeutic intervention requires the ability to access these interventions. If a patient does not have the means to purchase medications, to implement disease specific diet and other management criteria the likelihood that they will engage in optimal management is lessened. Patients with financial difficulty resulting in inaccessibility to care are more at-risk for poor disease management likely stemming from lack of adherence to specified therapies (Shaw and Bosworth, 2011). Financial instability is definitely a factor that deters adherence to therapeutic medical management in the hypertensive United States Virgin Islander.

Many of the participants expressed difficulty with sustaining certain aspects of their directed hypertensive management due to financial constraints. The majority 76.2% of the individual participants and 75% of the group participants had healthcare insurance. Most participants expressed an ability to afford their medications and medical doctor follow-up visits as appropriate with their health care insurance co-pay, but reported significant difficulty maintaining other aspects of their required self-care management, such as diet and exercise due limited financial resources. The participants commented on the depressed economy low wages and high cost of food. Most reported lack of accessibility to fruits and vegetables recommended by their healthcare provider due to high out-of-pocket cost. They expressed a sense of helplessness as it pertains to financial stability. **Joan** conveyed that she tries to buy the types of food the doctors tell her to buy, but because they are so expensive she can only maintain the diet for a short period. She stated:

> Yeah you cannot buy vegetables and such. You cannot eat what they tell you to eat. Your mind tells you to do short cut and buy something and you do it. Yes, because at first I will come I will see necessary what they tell me to buy but by the second week or the third week I won’t buy it anymore... It’s too expensive...

Inability to purchase foods that constitute a hypertensive diet could prove detrimental in hypertensive management. Foods that are preserved are usually the one that are less expensive and these are also foods highest in sodium, leading to very poor hypertensive management. Russell et al. (2010) also identified inability to purchase nutritional appropriate foods as one among several factors that deterred optimal management in diseases like hypertension and diabetes.

Jane expressed that she has insurance, but still finds it hard to get her medications and go to her follow-up appointments because of the cost. She stated she admits to not going to the doctor or taking her meds like she should, because of financial constraints. She stated:

> Every time you go its money, sometimes I try to avoid the pharmacy business the medications…. to spend the extra money. With the insurance, it is not that expensive but still to find the $100 it's not easy to find…

Candy reported that she does not have insurance because the deductible is so large that she would not be able to survive with her paycheck after this is taken out. She stated:

> It's not affordable we do have insurance where I work it's just its ridiculously insane…. premiums is $10,000, it is just ridiculous and it's just paying like $300 and something dollars out of your paycheck every pay period for one person it doesn't make sense either so I opt just to not have it and pay out of pocket.. I would love to see the doctor more and probably that would help because the doctor visits are expensive and…I would probably get to see the doctor a little more often. It's not that I don't go to Dr. appointments or if I am feeling sick I don't go, it's just that if I had insurance I would have gone sooner than later

Socioeconomic variants are real deterrents to adherence to antihypertensive therapy in this population and significantly impact healthcare outcomes. The financial burden of healthcare is real and must be taken into consideration when looking at adherence in any population. A depressed economic structure fosters unemployment, lack of revenue and eventual lack of adequate health promotion-type behaviors among persons with chronic illness like hypertension. A study by Park, Kim, Jang and Koh (2011) shows a statistically significant relationship between

employment and adherence *p*= 0.038, indicating that financial stability is a pertinent factor contributing to adherence type behavior in disease management.

Financial depression due to loss of wages and inability to support families adequately not only leads to decreased adherence, but also to increase stressors that can adversely-affect hypertension management. Blood pressure levels could be adversely affected by stress, lack of adequate financing to provide food, shelter and other necessities for self and family. This dynamic served as a major source of stress in the study by Osborn, Mayberry, Wagner, and Welch (2014). da Silva Barreto, Cremonese, Janeiro, Matsuda, and Marcon (2015). The researchers in this study conducted a cross-sectional descriptive study to evaluate the prevalence of non-adherence of antihypertensive pharmacotherapy and to verify the association of non-adherence with bio-socioeconomic factors. The study consisted of 422 randomly-chosen participants. The study results showed 46.5% of the population was non-adherent, 59.48% female, 82.94% low socioeconomic status. Frequency of non-adherence in non-whites was most significant at15.41%. Having no private health insurance was associated with statistically significant implications for non-adherence p = 0.03. Authors concluded that low socioeconomic status and decreased access to care was directly associated with lower levels of adherence

A study by Tüzün, Aycan, and İlhan (2015) evaluated the impact of chronic disease and socioeconomic status on quality of life. Researchers conducted this study using a descriptive quantitative design with a sample of 2560 participants. The study concluded that an increased number of chronic illnesses decreased quality of life, but more important to this study, alow socio-economic station was associated with decreased quality of life. With the linear regression model, quality of life increased with increased socioeconomic status and decreased with decreased socio-economic status.

In this current study, the participants identified the depressed economy as a major source of stress plaguing the community of the Virgin Islands. They acknowledged the depressed economy as a major contributing factor to the prevalence of hypertension in the population. Many participants expressed non-adherence with consuming a DASH diet due to financial hardship. The current literature surrounding socioeconomic status and adherence to health-related management coincides with low socioeconomic status as a catalyst for non-adherence and overall low quality of life. The findings of this study indicate that adherence is jeopardized because of a stressed economic structure, which asserts negative impacts on hypertension management. Long-term sustainability is at-risk and healthcare outcomes will suffer tremendously as a result.

Deciding

Deciding is the basic social process that is derived from this study. This is the most dynamic process that fosters adherence to therapeutic medical regimen in the hypertensive population from the United States Virgin Islands. The management of chronic diseases requires the active participation of patient along with the healthcare provide (Who, 2003). Adherence to prescribed medical therapy is a vital component for effective and successful therapy, especially in chronic disease processes such as hypertension (WHO, 2003; WHO, 2011 and WHO, 2013). The dynamics that facilitate adherence in the hypertensive patient is multifaceted and can vary based on many factors. The factors that dictate adherence in the hypertensive population from the United States Virgin Islands is grounded in this theoretical framework of ***deciding***. This framework is structured by the five categories ***mistrusting, reacting, educating, socializing*** and ***financing***. The categories are all supported by the social structure and are grounded soundly in the culture. They have derived categories that all have factors that interlock based on ethno

cultural constituents. ***Deciding*** is the most active stimulus that dictates adherence. Although the factors of ***mistrusting, reacting, educating, socializing*** and ***financing*** exist the most powerful stimulus of adherence lies in the ultimate response to these factors.

Deciding though it is by choice is a very intricate and involved process. The process of ***deciding*** factors individual beliefs, insolences and ultimate desires. For the hypertensive person from the United States Virgin Islands to engage in adherence behavior there must be interaction and alignment of social and economic structure. Self-actualization and self-efficacy through culturally appropriate educational and social initiatives must be encountered. ***Mistrusting, reacting, educating, socializing*** **and** ***financing*** are the impetus of ***deciding***.

Significance of the Study

Hypertension is one of the most prominent factors contributing to morbidity and mortality stemming from heart disease and other vascular ailments (WHO, 2013). Data surrounding the impact of hypertension in at risk populations is necessary to help curtail the deleterious effects of this disease process. Statistics from the United States Virgin Islands department of health indicates that this disease negatively affects the United States Virgin Islander. The WHO and the CDC concludes adherence as one of the major factors prudent in managing chronic illnesses such as Hypertension and have deemed adherence behaviors as one of the most influential aspects of successful management of chronic diseases such as hypertension. Public health initiatives with management of chronic diseases provoke sustainable efficacious healthcare outcomes when cultural implications of care are dully examined (Iwelunmor, Newsome and Arhihenbuwa, 2014). This study examined health behaviors of this population surrounding hypertension collectively rather than individually and constructed a body of knowledge that could potentially create public health initiatives that may be effective in

combating the prevalence and resultant morbidity and mortality stemming from this disease process.

Significance to Nursing

Hypertension is a disease process that accounts for many deaths and disability especially in poor management. Per 2013-2014 statistics from the CDC, 35.5% of adults over the age of 20 has hypertension or are taking medications to treat this disease. 34.0 million Office visits and 3.7 million outpatient department visits have been documented as related to essential hypertension; there was a total of 30,770 end-stage renal disease deaths related to essential hypertension and 9.7 million deaths per 100,000 related to this disease. Statistics from the Virgin Islands Department of Health indicate the prominence of this disease among Virgin Islanders. Successful management of this disease process mandates adequate adherence to prescribed medical regimens (WHO, 2013). The literature-surrounding adherence to therapeutic medical management among hypertensive individuals was nonexistent prior to this current study. This premier study describes the current factors that impact adherence in the United States Virgin Islander and creates a logical platform that guides nursing practice, education and an avenue to facilitate future nursing research in this area. The relevance of these findings is significant to arrest the deleterious effects of this disease process on persons in this population.

Implications for Nursing Education

Nurses are the largest subset of the healthcare profession. They care for people of various backgrounds and from various subcategories of society on a daily basis. It is imperative that nurses learn the issues, challenges and traditions of various populations to deliver fundamentally sound and culturally conducive care for all patients and their families. To efficaciously deliver care in a holistic manner they must have a basic understanding of the complex needs that

surround various ethnic and cultural groups. This study offers information that will instruct the nurse or nursing student on the culturally implicated factors that drive care for the United States Virgin Islander and populations like it. The theoretical framework of ***deciding*** provides scientific instruction on the factors that impact adherence; this knowledge serves as a platform to develop culturally appropriate best practices and clinical models that are evidenced-based. The data derived from this study can serve to assist educational programs to make informed decisions regarding current clinical mandates that currently inform nursing curricular. This study adds to the body of knowledge that is nursing science in that it creates a platform to help build on the literature surrounding the identified importance of cultural awareness in establishing safe and effective patient care management. Nursing curriculums must possess dynamic instruction that highlights the importance of gender and culturally specific needs of the population. Curriculum developers can potentially use the findings of this study to help establish prospectuses that highlight the importance of understanding the ethno-cultural bases of patient/client behavior and its implications in disease management overall.

Implications for Nursing Practice

Nurses are at the forefront of care of the chronically-ill. Adequate management of these individuals requires scientifically renowned and ethno-culturally astute care. Marterson-Germain (2013, pg. 349) informs us that “to fully enter the patient’s experience and to provide comprehensive care that is respectful of the patient’s cultural beliefs and practices, nurses need to find a way to bridge the linguistic and cultural challenges that are inherent in caring for increasingly diverse population” This study identifies the prominent factors that could deter adherence and ultimately result in poor outcomes in this and like populations. This information allows nurses at the bedside and even the advanced practice nurse to acknowledge these factors

and astutely design plans of care that would facilitate the needs of these and like patients based on scientifically-derived factors. Designing plans of care that factor for potential non-adherence factors could potentially curtail this type of behavior and serve to alleviate the disease-associated burdens that results from non-adherence on this and like populations. Implementing health promotion and health education programs could help close the health literacy gap and serve to eliminate reactive-type health care behaviors. Improved healthcare literacy could potentially improve management outcomes with improved adherence self-efficacy and a decrease healthcare mistrust. This study presents the healthcare community on a whole with a broader understanding of the factors that impact adherence and affords better assessment of future adherence among members of this and like populations.

Implications for Nursing Research

This study presents the theoretical framework of *deciding* as the active process that describes the stimulus for adherence type behaviors among hypertensive persons of this population. This framework needs to be tested in quantitative study with larger study populations to substantially support its constituents. Each category identified in this study should also be further investigated in larger studies to gain a keener understanding of the attributes of these to adherence. This study could also serve as a premise for other related studies in similar populations. There is also great opportunity to further investigate the medicinal properties and efficacy of some of the herbs used for medicinal purposes among this population.

Implications for Health/Public Policy

Stakeholder involvement in combating hypertension and addressing factors related to adherence is an essential step in the direction towards improving hypertensive care and decreasing overall morbidity and mortality that could result from lack of disease control. This

study informs stakeholders of the most prominent factors surrounding the adherence phenomenon in the United States Virgin Islanders. Healthcare literacy proved to be a significant propagator of non-adherence in this population. This study indicates a strong need for more programs that address the issue of health promotion and disease prevention. Implementation of these well-needed healthcare programs could potentially improve the health of Virgin Islanders with or without hypertension. Findings of this study could also serve as a platform to implement care regimens that are culturally-prudent health initiatives that will serve to standardize hypertensive management in this and like populations. This study could also allow for the implementation of grants and other funding to help nurse researchers conduct randomized controlled trials that test implemented interventions and serve to evolve social policies that inform hypertensive management in the United States Virgin Islander.

Strengths and Limitations of the Study

This study has both strengths and limitations. One of the greatest strength of this study is that it was done in the United States Virgin Islands with persons who currently live there and experience the social and the psychosocial aspects of life on the Islands on a day-to-day basis. Another strength identified in this study is that the researcher presented rich data derived from the voices of the participants. The individual participants were either born in the Virgin Islands, or had lived there for a total eleven years or greater, with a diagnosis of hypertension for one year to longer than 31 years. Of the four group participants, three were also born on one of the Islands in the Virgin Islands the fourth has lived on the islands for longer than 31 years; all group participants had a diagnosis of hypertension for 20 years or more.

Efforts to ensure research rigor were embarked upon by the researcher. The researcher used field notes and memoing throughout the data collection and analysis process to ensure

dependability. The verifying of themes and categories ensured credibility and dependability. Themes in this study were saturated after the first 15 interviews and the researcher verified themes as she interviewed six additional participants. Themes were also verified with an expert focus group of participants. The researcher conducted member checks and sought expert assistance from dissertation chair and committee members. Conformability was ensured through the researcher's use of reflexive journaling and memoing. Transferability was done through use of demographics, which offered vivid descriptions of the study population to show assimilation with the Virgin Islands populace while factoring for variation in gender, education and economic stability.

Lack of continued accessibility to the study population was one of the weaknesses of this study. The researcher lived in Miramar, Florida and traveled to the United States Virgin Islands to conduct the study. Because of the traveling back and forth, the researcher was not able to conduct a thorough member check with all the study participants to verify the transcribed recordings. A total of two participants were lost to follow-up. Some participant member checks were done in person, while others were conducted via the telephone. Another limitation for this study was that the researcher was not able to recruit any participants from St. John the smallest of the three United States Virgin Islands. However, it is prudent to report that although there were no participants who live on the Island it is pertinent to note that due to limited resources on the Island, the natives of St. John travel to St. Thomas on a daily basis for necessities of living including healthcare. Further limitations rest in the fact that the researcher is a novice researcher and therefore may have missed pertinent information related to the study due to this inexperience. The intricacy of the Grounded Theory process also presented some challenge for a novice researcher. Finally, personal beliefs of the researcher who is a native of the United States

Virgin Islands and had personal tragedy related to hypertension may adversely affect the researcher's objectivity. However, to avert this the researcher did bracket and memo diligently throughout the study.

Recommendations for Future Research

Hypertension is a prominent and often debilitating chronic disease that necessitates adequate treatment that is efficacious. Efficacy does not necessarily lie in the potency of the medications or medical therapy, but with consistency of use. There are many personal, societal and cultural variations present in the average patient that can deter adherence to prescribed therapy. Understanding the factors that deter consistency of use is important to facilitate therapeutic control of the disease. More research needs to be done to uncover the factors that deter adherence to therapeutic regimens in this, and other populations of similar constituents. This current study merely touched the surface of the monster of non-adherence and inadequate disease management among persons of this population. Future studies should evaluate each category and subcategory provided as a deterrent of adherence individually. These future studies should include larger populations and should use other types of research methods to explore these factors in greater detail. The substantive ***Theory of Deciding*** derived in this study should be tested in a quantitative with a larger sample that could further substantiate it. Future studies should also focus on the use of herbal remedies for healing as embraced by this population.

Summary and Conclusions

This is a grounded theory that used an adaptive model of Strauss and Corbin's Grounded Theory method to create a substantive theory that defines the critical factors that influence adherence to therapeutic medical regimen among hypertensive persons from the United States Virgin Islands. The overarching aim of this study was to explore the various factors influencing

therapeutic adherence practices of the hypertensive United States Virgin Islander and to identify the US Virgin Islanders' basic understanding of the disease process and of the therapies used in treatment. A purposive sample of 21 individual participants from the Virgin Islands was used in Phase One of the study. A focus group of four similar participants was used to provide theoretical verifications of the categories arrived at in the analysis of the data derived from the individual participants in phase two if the study. Five main categories emerged from the data analysis: **mistrusting, educating, reacting, socializing** and ***financing***. These categories were substantiated by the literature. ***Deciding*** emerged as the social process describing the overall phenomenon. Strengths and weakness of the study were highlighted. Implications of this study for nursing education practice, research and public policy were explored. Suggestions for future research were proposed so that hypertension management could be optimized in this population and the deleterious effects of the disease curtailed.

References

Age, L. (2011). Grounded theory methodology: Positivism, hermeneutics, and pragmatism. *The Qualitative Report, 16*(6), 1599.

Alhalaiqa, F., Deane, K. H., & Gray, R. (2013). Hypertensive patients' experience with adherence therapy for enhancing medication compliance: A qualitative exploration. *Journal of Clinical Nursing*, 22(13-14), 2039-2052. doi:10.1111/j.1365-2702.2012.04321.x

AL-KANDARI, Y. Y. (2003). Religiosity and its relation to blood pressure among selected kuwaitis. *Journal of Biosocial Science, 35*(3), 463-472. doi:10.1017/S0021932003004632

American Heart Association (2013). High blood pressure- 2013 statistical fact sheet. Retrieved from: http://www.heart.org/idc/groups/heart-public/@wcm/@sop/@smd/documents/downloadable/ucm_319587.pdf

Apter, A. J., Wan, F., Reisine, S., Bender, B., Rand, C., Bogen, D. K. . . . Morales, K. H. (2013). The association of health literacy with adherence and outcomes in moderate-severe asthma. *The Journal of Allergy and Clinical Immunology, 132*(2), 321-327. doi:10.1016/j.jaci.2013.02.014

Archibald, C. (2011). Cultural tailoring for an afro-Caribbean community: a naturalistic approach. *Journal Of Cultural Diversity*, *18*(4), 114-119.

Bailey, J. E., Wan, J. Y., Tang, J., Ghani, M. A., & Cushman, W. C. (2010). Antihypertensive medication adherence, ambulatory visits, and risk of stroke and death. *Journal of General Internal Medicine*, 25(6), 495-503. doi:10.1007/s11606-009-1240-1

Bassett-Clarke, D., Krass, I., & Bajorek, B. (2012). Ethnic differences of medicines taking in older adults: A cross-cultural study in New Zealand. *International Journal of Pharmacy Practice,* 20(2), 90-98. doi:10.1111/j.2042-7174.2011.00169.x

Bauer, A. M., Schillinger, D., Parker, M. M., Katon, W., Adler, N., Adams, A. S. . . . Karter, A. J. (2013). Health literacy and antidepressant medication adherence among adults with diabetes: The diabetes study of northern california (DISTANCE). *Journal of General Internal Medicine, 28*(9), 1181-1187. doi:10.1007/s11606-013-2402-8

Berben, L., De Geest, S., Dobbels, F., Engberg, S., & Hill, M. N. (2012). An Ecological perspective on medication adherence. *Western Journal of Nursing Research 34*(5) 635-653.

Bidulescu, A., Francis, D. K., Ferguson, T. S., Bennett, N. R., Hennis, A. J. M., Wilks, R.. . U.S. Caribbean Alliance for Health Disparities Research Group (USCAHDR). (2015). Disparities in hypertension among black caribbean populations: A scoping review by the U.S. caribbean alliance for health disparities research group (USCAHDR). *International Journal for Equity in Health,* 14(1), 125.

Blumer, H. (1998). Symbolic interactionism perspective and method. Englewood Clifs, New Jersey: Prentice- Hall Inc.

Browstein, N., Constantine, R., Hoover, S., Wordlaw-Stinson, L., Orenstein, D., Farris, R., & Jones, P. (2008). Strategies for controlling blood pressure among low-income populations in Georgia. *Preventing Chronic Diseases, Public Health Research, Practice and Policy* 5(2). Retrieved from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2396988/

Balkrishnan, R. (1998). Predictors of medication adherence in the elderly. Clinical Therapeutics, 20(4), 764-771. doi: 10.1016/S0149-2918(98)80139-2

Balkrishnan, R. (2005). The importance of medication adherence in improving chronic-disease related outcomes: What we know and what we need to further know. Medical Care, 43(6), 517-520. doi:10.1097/01.mlr.0000166617.68751.5f

Berben, L., Dobbels, F., Engberg, S., Hill, M. N., & De Geest, S. (2012). An ecological perspective on medication adherence. *Western Journal of Nursing Research,* 34(5), 635-653.

Blumer, H. (1998). Symbolic interactionism perspective and method. Englewood Clifs, New Jersey: Prentice- Hall Inc.

Bryant, A. (2009). Grounded theory and pragmatism: The curious case of Anselm Strauss. *Forum : Qualitative Social Research, 10*(3)

Boulware, L. E., Cooper, L. A., Ratner, L. E., LaVeist, T. A., & Powe, N. R. (2003). Race and trust in the health care system. *Public Health Reports (1974-), 118*(4), 358-365. doi:10.1093/phr/118.4.358

Breaux-Shropshire, T. L., Brown, K. C., Pryor, E. R., & Maples, E. H. (2012). Relationship of blood pressure self-monitoring, medication adherence, self-efficacy, stage of change, and blood pressure control among municipal workers with hypertension. *Workplace Health & Safety, 60*(7), 303-311. doi:10.3928/21650799-20120625-04

Brown, C. M. (2000). Exploring the role of religiosity in hypertension management among african americans. *Journal of Health Care for the Poor and Underserved, 11*(1), 19-32.

Brown, M. T., & Bussell, J. K. (2011). Medication adherence: WHO cares? Mayo Clinic Proceedings.Mayo Clinic, 86(4), 304-314. doi:10.4065/mcp.2010.0575

Calhoun, D. A., Irvin, M. R., Krousel-Woods, M., Lackland, D. T, Limdi, N. A., Mann, D. M., et al. (2012). Prevalence and correlates of low income medication adherence in apparent

treatment-resistant hypertention. *Journal of Clinical Hypertension, 14*(10). DOI: 10.111/J.1751-7176.2012.00690.x

Callwood, Gloria B,PhD., R.N., Campbell, Doris, PhD,A.R.N.P., F.A.A.N., Gary, Faye,EdD., F.A.A.N., & Radelet, M. L., PhD. (2012). Health and health care in the U.S. Virgin Islands: Challenges and perceptions. *ABNF Journal*, 23(1), 4-7. Retrieved from http://ezproxy.barry.edu/login?url=http://search.proquest.com/docview/918213081?accountid=27715

Casagrande, S. S., Gary, T. L., LaVeist, T. A., Gaskin, D. J., & Cooper, L. A. (2007). Perceived discrimination and adherence to medical care in a racially integrated community. *Journal of General Internal Medicine*, 22(3), 389-395. doi:10.1007/s11606-006-0057-4

Centers for Disease Control (CDC). (1990). Health beliefs and compliance with prescribed medication for hypertension among black women--new orleans, 1985-86. *MMWR. Morbidity and Mortality Weekly Report*, 39(40), 701.

Center for Disease Control. (2011). High blood pressure fact sheet. http://www.CDC.gov/CDC http://www.cdc.gov/bloodpressure/facts.htm

Chambers, S., Raine, R., Rahman, A., Hagley, K., De Ceulaer, K., & Isenberg, D. (2008). Factors influencing adherence to medications in a group of patients with systemic lupus erythematous in Jamaica. *Lupus*, 17(8), 761-769. doi:10.1177/0961203308089404

Cheney, B., & Cheromcha, K. (2011). Prenatal care at windham hospital: A culturally sensitive approach to reducing health-care disparities and improving patient outcomes. *Connecticut Medicine*, 75(6), 355.

Chen, S., Tsai, J., & Chou, K. (2011). Illness perceptions and adherence to therapeutic regimens among patients with hypertension: A structural modeling approach. *International Journal of Nursing Studies,* 48(2), 235-245. doi:10.1016/j.ijnurstu.2010.07.005

Connell, P., McKevitt, C., & Wolfe, C. (2005). Strategies to manage hypertension: a qualitative study with black Caribbean patients. *The British Journal of General Practice*, 55(514), 357–361.

Corbin, J., Strauss, A. (2008). *Basics of qualitative research* (3rd ed.). Thousand Oaks, California: SAGE publications.

Creswell, J. W. (2013*). Qualitative inquiry and research design: Choosing among five traditions.* Thousand Oaks, CA: SAGE Publications.

Creswell, J. W. (2014). *Research design: qualitative, quantitative and mixed methods approaches*. Thousand Oaks, CA: SAGE Publication.

Crotty, M. (1998). *The foundations of social research: meaning and perspective in the research process*. Thousand Oaks, New Delhi: SAGE Publications

Cohen, S., M. (2009). Concept analysis of adherence in the context of cardiovascular risk reduction . *Nursing Forum, 44*(1), 25-35.

Creswell, J. W. (2013*). Qualitative inquiry and research design: Choosing among five traditions.* Thousand Oaks, CA: SAGE Publications.

Creswell, J. W. (2014). *Research design: qualitative, quantitative and mixed methods approaches*. Thousand Oaks, CA: SAGE Publication.

Crotty, M. (1998). *The foundations of social research: meaning and perspective in the research process*. Thousand Oaks, New Delhi: SAGE Publications

Cushing, A., & Metcalfe, R. (2007). Optimizing medicines management: From compliance to concordance. *Therapeutics and Clinical Risk Management*, 3(6), 1047-1058.

Cuffee, Y. L., Hargraves, J. L., Rosal, M., Briesacher, B. A., Schoenthaler, A., Person, S., & ... Allison, J. (2013). Reported Racial Discrimination, Trust in Physicians, and Medication Adherence Among Inner-City African Americans With Hypertension. *American Journal Of Public Health*, *103*(11), e55-e62. doi:10.2105/AJPH.2013.301554

Cuffee, Y. L., Angner, E., Oliver, N., Plummer, D., Kiefe, C., Hullett, S., & Allison, J. (2012). Does happiness predict medication adherence among african americans with hypertension? *Applied Research in Quality of Life*, 7(4), 403-412. doi:10.1007/s11482-012-9170-1

Dale, S. K., Bogart, L. M., Wagner, G. J., Galvan, F. H., & Klein, D. J. (2016). Medical mistrust is related to lower longitudinal medication adherence among african-american males with HIV. *Journal of Health Psychology*, 21(7), 1311

Doggrell, S. A., & Kairuz, T. (2014; 2013). Comparative studies of how living circumstances influence medication adherence in ≥65 year olds. International Journal of Clinical Pharmacy, 36(1), 30-35. doi:10.1007/s11096-013-9894-5

De Las Cuevas, C., Penate, W., & Sanz, E. J (2013). Psychiatric outpatients' self reported adherence versus psychiatrist' impression on adherence in affective disorders. *Human Psychopharmacology, 28*(3), 142-150. DOI: 10.1002/hup.2293.

da Silva Barreto, M., Cremonese, I. Z., Janeiro, V., Matsuda, L. M., & Marcon, S. S. (2015). Prevalence of non-adherence to antihypertensive pharmacotherapy and associated factors. *Revista Brasileira De Enfermagem*, *68*(1), 54-60. doi:10.1590/0034-7167.2015680109i

Egede, L. E., Lynch, C. P., Gebregziabher, M., Hunt, K. J., Echols, C., Gilbert, G. E., & Mauldin, P. D. (2013). Differential Impact of Longitudinal Medication Non-Adherence on Mortality by Race/Ethnicity among Veterans with Diabetes. *Journal of General Internal Medicine,* 28(2), 208–215. doi:10.1007/s11606-012-2200-8

Elder, K., Ramamonjiarivelo, Z., Wiltshire, J., Piper, C., Horn, W. S., Gilbert, K. L.. . Allison, J. (2012). Trust, medication adherence, and hypertension control in southern african american men. *American Journal of Public Health, 102*(12), 2242-2245. doi:10.2105/AJPH.2012.300777

Evans, G. (2013). A novice researcher's first walk through the maze of Grounded Theory: Rationalization for Classical Grounded Theory. *The Grounded Theory Review, 12*(1), 37-54.

Evers, S. M. A. A., Bruin, d., M., Oberje, E. J. M., Woerkum, v., C.M.J., & Kinderen, d., R.J.A. (2013). Cost effectiveness of medication adherence-enhancing interventions: A systematic review of trial-based economic evaluations. *PharmacoEconomics,* 31(12), 1155-1168.

Eze, M. C. (2011). Management of hypertension: A project on African American adherence

Flack, J. M., Domenic, S. A., George, B., Brown, A. L., Keith, F. R., Richard, G. H., Dallas, H., Wendell, J. E., David. K. S., Lea, J. P., Nasser, S., Nesbitt, S. D., Saunders, E., Scisney-Matlock, Jamerson, K. A. (2010). Management of high blood pressure in Blacks: an update from the international society on hypertension in Blacks consensus statement. Hypertension 56(3). doi: 10.1161/HYPERTENSIONAHA.110.152892

Fletcher, B. R., Hartmann-Boyce, J., Hinton, L., & McManus, R. J. (2015). The effect of self-monitoring of blood pressure on medication adherence and lifestyle factors: A systematic

review and meta-analysis. *American Journal of Hypertension, 28*(10), 1209-1221. doi:10.1093/ajh/hpv008

Franklin, M. M., Allen, W., Pickett, S., & Peters, R. M. (2015). Hypertensive symptom representations: A pilot study. *Journal Of The American Association Of Nurse Practitioners*, *27*(1), 48-53. doi:10.1002/2327-6924.12162

Gazmararian, J. A., Kripalani, S., Miller, M. J., Echt, K. V., Ren, J., & Rask, K. (2006). Factors associated with medication refill adherence in cardiovascular-related diseases: A focus on health literacy. *Journal of General Internal Medicine, 21*(12), 1215-1221. doi:10.1111/j.1525-1497.2006.00591.x

Glaser, B. G. (2005). Basic social processes. Grounded Theory Review. 3(4) http://groundedtheoryreview.com/2005/06/22/1533/

Glaser, B. G., Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research.* New Jersey: Aldine Transaction.

Grant, R. W., Singer, D. E., & Meigs, J. B. (2005). Medication adherence before an increase in antihypertensive therapy: A cohort study using pharmacy claims data. Clinical Therapeutics, 27(6), 773-781. doi:10.1016/j.clinthera.2005.06.004

Grim, C. E., Cowley, J.,Allen W., Hamet, P., Gaudet, D., Kaldunski, M. L., Kotchen, J. M., . . . Kotchen, T. A. (2005). Hyperaldosteronism and hypertension: Ethnic differences. *Hypertension*, 45(4, Part 2 Suppl), 766-772. doi:10.1161/01.HYP.0000154364.00763.d5

Hall, M. A., Dugan, E., Zheng, B., & Mishra, A. K. (2001). Trust in physicians and medical institutions: What is it, can it be measured, and does it matter? *The Milbank Quarterly, 79*(4), 613-639. doi:10.1111/1468-0009.00223

Hall, M. A., Camacho, F., Dugan, E., & Balkrishnan, R. (2002). Trust in the Medical Profession: Conceptual and Measurement Issues. *Health Services Research*, *37*(5), 1419–1439. http://doi.org/10.1111/1475-6773.01070

Haltiwanger, E. P. (2012). Effect of a group adherence intervention for Mexican-American older adults with type 2 diabetes. American Journal of Occupational Therapy, 66, 447–454. http://dx.doi.org/10.5014/ajot.2012.004457

Hajjar, I., & Kotchen, T. A. (2003). Trends in prevalence, awareness, treatment, and control of hypertension in the United States, 1988-2000. *JAMA,* 290(2), 199-206. doi:10.1001/jama.290.2.199

Hamar, B., Wells, A., Gandy, W., Haaf, A., Coberley, C., Pope, J. E., & Rula, E. Y. (2010). The impact of a proactive chronic care management program on hospital admission rates in a german health insurance society. *Population Health Management, 13*(6), 339-345. doi:10.1089/pop.2010.0032

Haynes, R. B., Ackloo, E., Sahota, N., McDonald, H. P., & Yao, X. (2008). Interventions for enhancing medication adherence. *The Cochrane Database of Systematic Reviews,* (2), CD000011.

Health Disparities Profiles (2011). Washington, DC: DHHS Office on Women's Health

Health Education authority, (1998). Hypertension and the African-Caribbean community: guidance for health professionals. Retrieved from: http://www.nice.org.uk/nicemedia/documents/hyperten_afrcarib.pdf

Hekler, E. B., Lambert, J., Leventhal, E., Leventhal, H., Jahn, E., & Contrada, R. J. (2008). Commonsense illness beliefs, adherence behaviors, and hypertension control among

african americans. *Journal of Behavioral Medicine, 31*(5), 391-400. doi:10.1007/s10865-008-9165-4

Health Education authority, (1998). Hypertension and the African-Caribbean community: guidance for health professionals. Retrieved from: http://www.nice.org.uk/nicemedia/documents/hyperten_afrcarib.pdf

Higginbottom, G. M. A., Mogale, R. S., Mollel, O., Ortiz, L., Richter, M. S. & Young, S. (2011). Identification of nursing assessment model/tools validated in clinical practice for use with diverse ethno-cultural groups: an integrative review of the literature. *BioMed Central.* 10(16). Retrieved from http://www.biomedcentral.com/1472-6955/10/16

Holt, E., Joyce, C., Dornelles, A., Morisky, D., Webber, L. S., Muntner, P., & Krousel- Wood, M. (2013). Sex differences in barriers to antihypertensive medication adherence: Findings from the cohort study of medication adherence among older adults. *Journal of the American Geriatrics Society*, 61(4), 558-564. doi:10.1111/jgs.12171

Hon, A. (2012). Factors influencing the adherence of antipsychotic medication (Aripiprazole) in first-episode psychosis: findings from a grounded theory study. Journal of psychiatric and Mental Health Nursing, 19(3). doi: 10.1111/j.1365-2850.2012.0189.x

Hsu, Y., Mao, C., & Wey, M. (2010). Antihypertensive medication adherence among elderly Chinese American. *Journal of Transcultural Nursing*, 21(4), 297-305. doi: 10.1177/1043659609360707.

Hutchison, J., Warren-Findlow, J., Dulin, M., Tapp, H., & Kuhn, L. (2014). The Association Between Health Literacy and Diet Adherence Among Primary Care Patients with Hypertension. *Journal Of Health Disparities Research & Practice*, *7*(2), 109-126.

ICCCN (2008), Map of The United States Virgin Islands. http://icccn.org/icccn08/App_Themes/Theme1/vi_map.jpg

Ingram, R. R., & Ivanov, L. L. (2013). Examining the association of health literacy and health behaviors in african american older adults: Does health literacy affect adherence to antihypertensive regimens? *Journal of Gerontological Nursing, 39*(3), 22. doi:10.3928/00989134-20130201-01

Irvin, M. R., Shimbo, D., Mann, D. M., Reynolds, K., Krousel‐Wood, M., Limdi, N. A., . . . Muntner, P. (2012). Prevalence and correlates of low medication adherence in apparent Treatment‐Resistant hypertension. *The Journal of Clinical Hypertension*, 14(10), 694-700. doi:10.1111/j.1751-7176.2012.00690.x

Iwelunmor, J., Newsome, V., & Airhihenbuwa, C. O. (2014). Framing the impact of culture on health: a systematic review of the PEN-3 cultural model and its application in public health research and interventions. *Ethnicity & Health*,*19*(1), 20-46. doi:10.1080/13557858.2013.857768

Jameas, P. K., Oparil, S., Carter, B. L., Cushman, W. C., Dennison-Himmelfrab, C., Handler, J., Lackland, D. T., Levre, M. L., Mackenzie, T. D., Ogedegbe, O., Smith, S. C., Svetkey, L. P., Taler, S. J., Towsend, R. R., Wright, J. T., Narva, A. S., Ortiz, E. (2013). 2014 Evidence-based guideline for the management of high blood pressure in adults report from the panel members appointed to the eighth joint national committee. *JAMA* 311(5). doi:10.1001/jama.2013.284427

Johnson, V. R., Jacobson, K. L., Gazmararian, J. A., & Blake, S. C. (2010). Does social support help limited-literacy patients with medication adherence? A mixed methods study of

patients in the pharmacy intervention for limited literacy (PILL) study. *Patient Education and Counseling, 79*(1), 14-24. doi:10.1016/j.pec.2009.07.002

Kannel, WB. (2000). Fifty years of the fragmingham study contributions to understanding hypertension. *Journal of Human Hypertension 3*(14) 83-90. Retrieved from: http://www.nature.com/jhj/journal/v14/n2/pdf/100049apdf

Kanter, M., Martinez, O., Lindsay, G., Andrews, K., & Denver, C. (2010). Proactive office encounter: A systematic approach to preventive and chronic care at every patient encounter. *The Permanente Journal,14*(3), 38-43.

Karakurt, P., & Kaşikçi, M. (2012). Factors affecting medication adherence in patients with hypertension. *Journal of Vascular Nursing: Official Publication of the Society for Peripheral Vascular Nursing*, 30(4), 118. doi:10.1016/j.jvn.2012.04.002

KEITH, I., THOMAS A. (1982). Renovascular hypertension in black patients. *Hypertension, 4*(3), 438-443. doi:10.1161/01.HYP.4.3.438

Kelly, M., McCarthy, S., & Sahm, L. J. (2014). Knowledge, attitudes and beliefs of patients and carers regarding medication adherence: A review of qualitative literature.*European Journal of Clinical Pharmacology, 70*(12), 1423-1431. doi:10.1007/s00228-014-1761-3

Kettani, F., Dragomir, A., Côté, R., Roy, L., Bérard, A., Blais, L., Perreault, S. (2009; 2008). Impact of a better adherence to antihypertensive agents on cerebrovascular disease for primary prevention. *Stroke; a Journal of Cerebral Circulation*, 40(1), 213-220. doi:10.1161/STROKEAHA.108.522193

Kotchen, T. A., Kotchen, J. M., Grim, C. E., Krishnaswami, S., & Kidambi, S. (2009). Aldosterone and alterations of hypertension-related vascular function in african americans. *American Journal of Hypertension,* 22(3), 319-324. doi:10.1038/ajh.2008.327

Krefting, L. (1991). Rigor in qualitative research: The assessment of trustworthiness. The American Journal of Occupational Therapy: *Official Publication of the American Occupational Therapy Association,* 45(3), 214.

Krousel-Wood, M., Islam, T., Muntner, P., Holt, E., Joyce, C., Morisky, D. E., . . . Frohlich, E. D. (2010). Association of depression with antihypertensive medication adherence in older adults: Cross-sectional and longitudinal findings from CoSMO. Annals of Behavioral Medicine, 40(3), 248-257. doi:10.1007/s12160-010-9217-1

Kyngäs, H., Duffy, M. E., & Kroll, T. (2000). Conceptual analysis of compliance. *Journal of Clinical Nursing,* 9(1), 5-12. doi:10.1046/j.1365-2702.2000.00309.x

Kung, H., Xu, J. (2015). Hypertension-related mortality in the United States, 2000–2013. NCHS data brief, no 193. Hyattsville, MD: National Center for Health Statistics.

Kwekudee (2014). A Trip Down Memory Lane. http://kwekudee-tripdownmemorylane.blogspot.com/2014/06/us-virgin-islands-caribbean-people-of.html

Larsen, T. R., Gelaye, A., Waanbah, B., Assad, H., Daloul, Y., Williams, F.. . Steigerwalt, S. (2014). Prevalence of masked hypertension in african americans. *The Journal of Clinical Hypertension, 16*(11), 801-804. doi:10.1111/jch.12418

Lee, S., & Jeon, S. (2008). The knowledge, attitude and practice of blood pressure management from the patient's viewpoint: A qualitative study. *Journal of Preventive Medicine and Public Health, 41*(4), 255-264. doi:10.3961/jpmph.2008.41.4.255

Lawes, C. M., Hoorn, S. V., Rodgers, A., & International Society of Hypertension. (2008). Global burden of blood-pressure-related disease, 2001. *The Lancet*, 371(9623), 1513-1518. doi:10.1016/S0140-6736(08)60655-8

Leutwyler, H. C., Fox, P. J., & Wallhagen, M. (2013). Medication adherence among older adults with schizophrenia. *Journal of Gerontological Nursing,* 39(2), 26. doi:10.3928/00989134-20130109-02

Lee, G. K. Y., Wang, H. H. X., Liu, K. Q. L., Cheung, Y., Morisky, D. E., & Wong, M. C. S. (2013). Determinants of medication adherence to antihypertensive medications among a chinese population using morisky medication adherence scale. *PloS One*, 8(4), e62775. doi:10.1371/journal.pone.0062775

Lewis, L., Askie, P., Randleman, S., Shelton-Dunston, B.(2010). Medication adherence beliefs of community-dwelling hypertensive African Americans. Journal of Cardiovascular Nursing, 25(3) 199-206.

Li, W., Kuo, C., Hwang, S., Hsu, H. (2012). Factors related to medication non-adherence for patients with hypertension in Taiwan. Journal of Clinical Nursing, 21(3), 1816-1824. doi: 10.1111/j.1365-2702.2012.04088.x

Lewis, L. M. (2011). Medication adherence and spiritual perspectives among african american older women with hypertension. Journal of Gerontological Nursing, 37(6), 34-41. doi:10.3928/00989134-20100201-02

Marshall, J., & Archibald, C. (2015). The Influence of Spirituality on Health Behaviors in an Afro-Caribbean Population. *ABNF Journal*, *26*(3), 57-62.

Martin, L. R., Williams, S. L., Haskard, K. B., & DiMatteo, M. R. (2005). The challenge of patient adherence. *Therapeutics and Clinical Risk Management*, 1(3), 189–199.

Materson-Germain, M. (2013). Culture as a variable in practice. In *Advanced practice nursing* (pp. 349-378). Newark, New Jersey: FA Davis Company

Marx, G., Witte, N., Himmel, W., Kühnel, S., Simmenroth-Nayda, A., & Koschack, J. (2011). Accepting the unacceptable: Medication adherence and different types of action patterns among patients with high blood pressure. *Patient Education and Counseling*, 85(3), 468-474. doi:10.1016/j.pec.2011.04.011

McNaughton, C. D., Jacobson, T. A., & Kripalani, S. (2014). Low literacy is associated with uncontrolled blood pressure in primary care patients with hypertension and heart disease.*Patient Education and Counseling, 96*(2), 165-170. doi:10.1016/j.pec.2014.05.007

Morgan, M., & Watkins, C. J. (1988). Managing hypertension: beliefs and responses to medication among cultural groups. Sociology of Health & Illness, 10(4). doi:10.1111/1467-9566.ep10837256

Morisky, D. E., Green, L. W., Levine, W. (1986). Concurrent and predictive validity of a self-reported measure of medication adherence. *Medical Care*, 24 (3) 67–74.

Moser, M. (2006). Historical perspectives on the management of hypertension. *The Journal of Clinical Hypertension 8*(8). Retrieved from: onlinelibrary.wiley.com

Munhall, P. L. (2012). *Nursing research: A qualitative perspective* (5th ed.). Ontario Canada: Jones & Bartlett

Murray, B., & McCrone, S. (2015). An integrative review of promoting trust in the patient-primary care provider relationship. *Journal Of Advanced Nursing*, *71*(1), 3-23. doi:10.1111/jan.12502

National institute of health: Office of Behavioral Health and Social Science Research (Nd). https://obssr-

archive.od.nih.gov/scientific_areas/social_culture_factors_in_health/health_literacy/index.aspx

Ogedegbe, G., Mancuso, C. A., & Allegrante, J. P. (2004). Expectations of blood pressure management in hypertensive african-american patients: A qualitative study. *Journal of the National Medical Association, 96*(4), 442-449.

Omodei, M. M., & McLennan, J. (2000). Conceptualizing and measuring global interpersonal mistrust-trust. *The Journal of Social Psychology, 140*(3), 279-294. doi:10.1080/00224540009600471

Osborn, C. Y., Mayberry, L. S., Wagner, J. A., & Welch, G. W. (2014). Stressors may compromise medication adherence among adults with diabetes and low socioeconomic status. *Western Journal of Nursing Research, 36*(9), 1091-1110. doi:10.1177/0193945914524639

Park, Y., Kim, H., Jang, S., & Koh, C. K. (2013; 2011). Predictors of adherence to medication in older korean patients with hypertension. *European Journal of Cardiovascular Nursing*, 12(1), 17-24. doi:10.1016/j.ejcnurse.2011.05.006

Petek, D., Rotar-Pavlič, D., Kersnik, J., & Švab, I. (2010). Patients' adherence to treatment of diabetes mellitus. Slovenian *Journal of Public Health,* 49(1), 11-18. doi:10.2478/v10152-010-0002-0

Pickett, S., Allen, W., Franklin, M., & Peters, R. M. (2014; 2013). Illness beliefs in african americans with hypertension. *Western Journal of Nursing Research, 36*(2), 152-170. doi:10.1177/0193945913491837

Polit, D. & Beck, C. (2012). *Nursing research: Generating and assessing evidence for nursing practice* (9th ed.). Philadelphia: Lippincott, Williams & Wilkins.

Purnell, L. D., & Paulanka, B. J. (2003). *Transcultural health care: a culturally competent approach* (2nd ed). Philadelphia, PA: FA Davis Company

Roy, L., White-Guay, B., Dorais, M., Dragomir, A., Lessard, M., & Perreault, S. (2013). Adherence to antihypertensive agents improves risk reduction of end-stage renal disease. *Kidney International,* 84(3), 570. doi:10.1038/ki.2013.103

Russell, B. E., Gurrola, E., Ndumele, C. D., Landon, B. E., O'Malley, J. A., Keegan, T., . . . Community Health and Academic Medicine Partnership Project. (2010). Perspectives of non-hispanic black and latino patients in boston's urban community health centers on their experiences with diabetes and hypertension. *Journal of General Internal Medicine, 25*(6), 504. doi:10.1007/s11606-010-1278-0

Russell, C. L., Cronk, N. J., Herron, M., Knowles, N., Matteson, M. L., Peace, L., & Ponferrada, L. (2011). Motivational interviewing in dialysis adherence study (MIDAS). Nephrology Nursing Journal : *Journal of the American Nephrology Nurses' Association,* 38(3), 229.

Safiya, A. A., Geiser, H. R., Jacob Arriola, K. R., & Kripalani, S. (2009). Health literacy and control in the medical encounter: A mixed-methods analysis. *Journal of the National Medical Association, 101*(7), 677-683. doi:10.1016/S0027-9684(15)30976-7

Sansbury, B., Dasgupta, A., Guthrie, L., & Ward, M. (2014). Time perspective and medication adherence among individuals with hypertension or diabetes mellitus. *Patient Education and Counseling*, 95(1), 104-110. doi:10.1016/j.pec.2013.12.016

Schoenthaler, A., Allegrante, J. P., Chaplin, W., & Ogedegbe, G. (2012). The effect of Patient–Provider communication on medication adherence in hypertensive black patients: Does race concordance matter? *Annals of Behavioral Medicine*, 43(3), 372-382. doi:10.1007/s12160-011-9342-5

Shaw, R., & Bosworth, H. B. (2012). Baseline medication adherence and blood pressure in a 24-month longitudinal hypertension study: Medication adherence BP. *Journal of Clinical Nursing, 21*(9-10), 1401-1406. doi:10.1111/j.1365-2702.2011.03859.x

Sheppard, V. B., Williams, K. P., Wang, J., Shavers, V., & Mandelblatt, J. S. (2014). An examination of factors associated with healthcare discrimination in latina immigrants: The role of healthcare relationships and language. *Journal of the National Medical Association,* 106(1), 15.

Shevon Harvey, I., & Cook, L. (2010). Exploring the role of spirituality in self-management practices among older african-american and non-hispanic white women with chronic conditions. *Chronic Illness, 6*(2), 111-124. doi:10.1177/1742395309350228

Sheppard, V. B., Wang, J., Yi, B., Harrison, T. M., Feng, S., Huerta, E. E.. . For the Latin American Cancer Research Coalition. (2008). Are health-care relationships important for mammography adherence in latinas? *Journal of General Internal Medicine,* 23(12), 2024-2030. doi:10.1007/s11606-008-0815-6

Shenton, A. K, (2004). Stratergies for ensuring trustworthiness in qualitative research projects. Education for information 22(3).

Spoelstra, S. L., Schueller, M., Hilton, M., & Ridenour, K. (2015). Interventions combining motivational interviewing and cognitive behaviour to promote medication adherence: A literature review. *Journal of Clinical Nursing*, 24(9-10), 1163-1173. doi:10.1111/jocn.12738

Strenski, T. A. (2011). *A conceptual framework and item bank for medical mistrust: Comparing african americans and whites*

Study results from university of british columbia provide new insights into hypertension (antihypertensive medication adherence and mortality according to ethnicity: A cohort study) (2014). *NewsRX LLC*.

Trojan, L., & Yonge, O. (1993). Developing trusting, caring relationships: Home care nurses and elderly clients. *Journal of Advanced Nursing,* 18(12), 1903-1910. doi:10.1046/j.1365-2648.1993.18121903.x

The National Coordinating Centre for Service Delivery and Organization. (2005). *Adherence.* Retrieved from http://www.nets.nihr.ac.uk/search/?sort=&collection=netscc&advanced=true&num_ranks=50&gscope1=2&query=adherence&meta_R_sand=&meta_N_sand=&meta_S=&meta_Q_sand=&meta_H_sand=&meta_T

Tucker, C. M., Lopez, M. T., Campbell, K., Marsiske, M., Daly, K., Nghiem, K.. . Patel, A. (2014). The effects of a culturally sensitive, empowerment-focused, community-based health promotion program on health outcomes of adults with type 2 diabetes. *Journal of Health Care for the Poor and Underserved*, 25(1), 292-307. doi:10.1353/hpu.2014.0044

Tucker, C. M., Moradi, B., Wall, W., & Nghiem, K. (2014). Roles of perceived provider cultural sensitivity and health care justice in african American/Black patients' satisfaction with provider. *Journal of Clinical Psychology in Medical Settings, 21(3), 282-290.* doi:10.1007/s10880-014-9397-0

Tüzün, H., Aycan, S., & İlhan, M. N. (2015). Impact of comorbidity and socioeconomic status on quality of life in patients with chronic diseases who attend primary health care centres. *Central European Journal Of Public Health*, *23*(3), 188-194.

Truncali, A., Dumanovsky, T., Stollman, H., & Angell, S. Y. (2010). Keep on Track: A Volunteer-Run Community-Based Intervention to Lower Blood Pressure in Older Adults. *Journal Of The American Geriatrics Society*, *58*(6), 1177-1183. doi:10.1111/j.1532-5415.2010.02874.x

United States Virgin Islands Department of Health (2003). Healthy Virgin Islands 2010: *Improving Health for all*. Retrieved from: http://lifestylefestival.com/docs/2008/VIDOH_hEALTHY_VI_2010_Plan_March_2003.pdf

Unantenne, N., Warren, N., Canaway, R., & Manderson, L. (2013). The strength to cope: Spirituality and faith in chronic disease. *Journal of Religion and Health, 52*(4), 1147-1161. doi:10.1007/s10943-011-9554-9

USVI and BVI Friendship Day (2012) http://stcroixsource.com/files/userfiles/image/2012%20October/USVI-BVI%20Friendship

U.S. Department of Commerce. (2011). U.S. census bureau news. http://www.census.gov/2010census/news/releases/operations/cb11-cn125.html

Wannasirikul, P., Termsirikulchai, L., Sujirarat, D., Benjakul, S., & Tanasugarn, C. (2016). health literacy, medication adherence, and blood pressure level among hypertensive older adults treated at primary health care centers. *The Southeast Asian Journal of Tropical Medicine and Public Health, 47*(1), 109.

Wasti, S. P., Randall, J., Simkhada, P., & van Teijlingen, E. (2011). In what way do nepalese cultural factors affect adherence to antiretroviral treatment in Nepal? *Health Science Journal,* 5(1), 37-47. Retrieved from

http://ezproxy.barry.edu/login?url=http://search.proquest.com/docview/845921688?accountid=27715

Wong, D. (2015, Aug 05). Is your health care proactive or reactive? *The Record* Retrieved from http://ezproxy.barry.edu/login?url=http://search.proquest.com/docview/1701705957?accountid=27715

World Health Organization (WHO). (2003). *Improving adherence rates guide for countries*. Retrieved from http://www.whoint/en

World Health Organization (WHO) (2013) Why hypertension is a major public health issue. Retrieved from: http://www.whoint/en

World Health Organization (2011) Global atlas on cardiovascular disease prevention and control. Retrieved from: whqlibdoc.who.int/publications/2011/9789241564373_eng.pdf .

World Health Organization (2016) Health System: Key Expected results. Retrieved from: http://www.who.int/healthsystems/about/progress-challenges/en/

Wu, P., Yang, C., Yao, Z., Lin, W., Wu, L., & Chang, C. (2010). Relationship of blood pressure control and hospitalization risk to medication adherence among patients with hypertension in taiwan. *American Journal of Hypertension*, 23(2), 155-160. doi:10.1038/ajh.2009.210

Wuest, J. (2012). Grounded theory: The method. In P. L. Munhall (Ed.), *Nursing research: A qualitative perspective* (5th ed., pp. 225-256.). Sudbury, MA: Jones & Bartlett.

Yue, Z., Bin, W., Weilin, Q., & Aifang, Y. (2015). Effect of medication adherence on blood pressure control and risk factors for antihypertensive medication adherence. *Journal of Evaluation in Clinical Practice*, 21(1), 166-172. doi:10.1111/jep.12268

Appendix A

IRB Approval Document

Barry University

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Research with Human Subjects
Protocol Review

Date:	February 3, 2016
Protocol Number:	160120
Title:	Critical Factors that Influence Adherence to Therapeutic Medical Regimen among Hypertensive United States Virgin Islanders (USVI)
Meeting Date:	January 20, 2016
Researcher Name:	Ms. Jamelah Morton
Address:	
Faculty Sponsor:	Dr. Jessie Colin

Dear Ms. Morton:

On behalf of the Barry University Institutional Review Board (IRB), I have verified that the specific changes requested by the convened IRB on January 20, 2016 have been made.

It is the IRB's judgment that the rights and welfare of the individuals who may be asked to participate in this study will be respected; that the proposed research, including the process of obtaining informed consent, will be conducted in a manner consistent with requirements and that the potential benefits to participants and to others warrant the risks participants may choose to incur. You may therefore proceed with data collection.

As principal investigator of this protocol, it is your responsibility to make sure that this study is conducted as approved by the IRB. Any modifications to the protocol or consent form, initiated by you or by the sponsor, will require prior approval, which you may request by completing a protocol modification form.

It is a condition of this approval that you report promptly to the IRB any serious, unanticipated adverse events experienced by participants in the course of this research, whether or not they are directly related to the study protocol. These adverse events include, but may not be limited to, any experience that is fatal or immediately life-

threatening, is permanently disabling, requires (or prolongs) inpatient hospitalization, or is a congenital anomaly cancer or overdose.

The approval granted expires on February 7, 2017. Should you wish to maintain this protocol in an active status beyond that date, you will need to provide the IRB with an IRB Application for Continuing Review (Progress Report) summarizing study results to date. The IRB will request a progress report from you approximately three months before the anniversary date of your current approval.

If you have questions about these procedures, or need any additional assistance from the IRB, please call the IRB point of contact, [redacted] at [redacted] or send an e-mail to [redacted]. Finally, please review your professional liability insurance to make sure your coverage includes the activities in this study.

Sincerely,

Chair, Institutional Review Board

Cc: Dr. Jessie Colin

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Note: The investigator will be solely responsible and strictly accountable for any deviation from or failure to follow the research protocol as approved and will hold Barry University harmless from all claims against it arising from said deviation or failure.

Approved by Barry University IRB :
Date : 6/3/15
Signature :

Appendix B

Barry University
Informed Consent
Focus Group Interview
For use with face to face and Skype

Your participation in a research project is requested. The title of the study is Critical factors that influence adherence to therapeutic medical regimen among hypertensive United States Virgin Islanders. The research will be conducted by Jamelah A. Morton, a student in the College of Nursing and Health Science department at Barry University, and is seeking information that is useful in the field of nursing. The aim of this research initiative is to generate a substantive theory that offers some explanation about the factors that influence adherence to hypertensive therapeutic regimen among hypertensive individuals from the United States Virgin Islands. In accordance with these aims the following procedures will be used in the focus group interview: An audiotaped focus group interview with some participants via face to face interaction, and some participants via Skype communication. The interview will last approximately 60 minutes. Each participant will be given 10-minutes to complete a demographic questionnaire prior to the initial interview. The total allotted time for participation in this study is 70 minutes. The maximum number of group participants will be 8.

If you decide to participate you must meet the following criteria:

- Individual must be a United States Virgin Islander by birth or acculturated (Living on Island for 20 years or greater)
- Persons ages 50-85 years of age.
- Person must have a self-reported diagnosis of hypertension for 20 years or greater.
- Each participant must be able to speak, read and write in English
- Person must have been placed on some mode of blood pressure management by a health care professional
- Person must have a computer; the decision to participate via Skype or face-to-face will be determined by the researcher based on availability therefore all group participants must have this equipment on hand in the event that they may not be face-to-face with the researcher.

If you decide to participate in this research, you will receive a $25.00 American Express Gift card as a token of appreciation. This gift is yours to keep.

You will be asked to do the following:

- Take 10 minutes to complete a demographic questionnaire
- Participate in a 60 minute audiotaped semi-structured face-to-face or Skype interview with the researcher and other group members.

Your consent to participate in this research study is strictly voluntary and should you decide not to participate or to decline to answer any or all questions, or choose not to complete all the requirements of the study, you will suffer no adverse effects. This study does not benefit

Approved by Barry University IRB:
Date: 6/8/15
Signature:

307

Appendix B
Barry University
Informed Consent
Individual Interview

For use with face-to-face, telephone and Skype

Your participation in a research project is requested. The title of the study is Critical factors that influence adherence to therapeutic medical regimen among hypertensive United States Virgin Islanders. The research will be conducted by Jamelah A. Morton, a student in the College of Nursing and Health Science Barry University, and is seeking information that is useful in the field of nursing. The aim of this research initiative is to generate a substantive theory that offers some explanation about the factors that influence adherence to hypertensive therapeutic regimen among the population from the United States Virgin Islands. In accordance with these aims the following procedures will be used in the individual interviews: An audiotaped individual semi-structured face-to-face, Skype or telephone interview lasting approximately 60-minutes for each participant is required. Each individual participant will be given a 10-minute period prior to beginning the interview to complete a demographic questionnaire. A second 30-minute interview will take place with each individual participant via telephone or Skype; this is a follow up interview conducted for clarification and verification of information collected in the first interview. Total time commitment for each individual participant is 100 minutes. The maximum number of individual participants will be 25.
If you decide to participate you must meet the following criteria:

- Individual must be a United States Virgin Islander by birth or acculturated (Living on Island for 5 years or greater)
- Persons between the ages of 18-80
- Person must have a self-reported diagnosis of hypertension for one year or longer.
- Person must have been placed on some mode of blood pressure management by a health care professional
- Each participant must be able to speak, read and write English.
- Must have access to a telephone and a computer

If you decide to participate in this research, you will be asked to do the following:

- Complete a demographic questionnaire within 10 minutes
- Participate in a 60 minute audiotaped semi-structured face-to-face, telephone or Skype interview with the researcher.
- Participate in a second 30-minute telephone interview with the researcher to verify and clarify information collected by the researcher during the first interview.

You will receive a $25.00 American Express Gift card as a token of appreciation. This gift is yours to keep.

Your consent to participate in this research study is strictly voluntary and should you decide not to participate or choose not to answer any or all questions, complete all the requirements of the study, you will suffer no adverse effects. There are no direct benefits to you in this study, however information obtained in this study could prove to be instrumental in coordinating education and treatment strategies for hypertension among persons of the United States Virgin Islands.
There are no associated risks in this study. As a research participant, any information you provide will be held in confidence to the extent permitted by law. The researcher will use Skype® as a means of data collection for this study. Using this form of electronic communication raises concerns of cyber breach that can result in others snooping in on transmitted information. To prevent impersonation or loss of personal information, Skype® issues everyone a "digital certificate" which is an electronic credential that is documented in Skype® directory and is used to establish the identity of a Skype® user, no matter where or when the user signs into the application. Skype® utilizes publically documented extensively entrusted standards-based encrypted algorithms to protect communication transmitted by Skype® users from cyber hackers. Skype® uses its technological defenses ensure user's privacy as well as the integrity of data that is transmitted between users. If you have further concerns regarding Skype® privacy, please refer to the Skype® privacy policy. You will be asked to provide a pseudonym that you will use throughout the course of the study. Any results of the study published will be in aggregate form and will refer to group averages and will not refer to any particular individual. Data obtained from each participant will be audiotaped and will be transcribed by a professional transcriptionist and the principal researcher. The transcriptionist has signed a third party confidentiality form. The researcher will review the transcription form the transcriptionist to check accuracy of the data, and will review it with you to confirm its accuracy. Upon confirmation with you the audiotape will be permanently deleted. The transcribed data will be kept in a locked file cabinet in the researchers' home office and will be accessible only to the primary researcher. Your signed informed consent will be kept in a separate secure cabinet also only accessible to the researcher.
If you have any questions or concerns regarding this study or your participation you may contact me, Jamelah A. Morton, at (305)-984-2801 of JMorton@barry.edu, my supervisor, Dr. Jessie Colin, at (305) 899-3830 or JColin@barry.edu, or the Barry University Institutional Review Board point of contact, Barbra Cook, at (305)-899-3020 or BCook@barry.edu. You may also contact Dr. Gloria Callwood University of the Virgin Island research sponsor ay 340-693-1291 or gcallwo@uvi.edu.

If you are satisfied with the information that I provided you and you are willing to participate in this research study, please signify your consent by signing this consent form.

Voluntary Consent

I have acknowledge that I have been informed of the nature and the purposes of this experiment by Jamelah A. Morton and that I have read and understood the information presented above, and that I have received a copy of this form for my records. I give my voluntary consent to participate in this experiment.

Signature of Participant	*Date*

Researcher	*Date*	*Witness*	*Date*

(Witness signature is required only if research involves pregnant women, children, other vulnerable populations, or if more than minimal risk is present.

APPENDIX C

Letter of Sponsor Request for Access to Population of the Virgin Island

Date:

Primary Investigator and Director, Carribbean Exploratory Research Center
School of Nursing
University of the Virgin Islands
Faculty, FCAE7C
#2 John Brewer's Bay
St. Thomas, Virgin Islands, 00802

Dear Dr. ;

I am a doctoral student at Barry University conducting a study entitled "Critical factors that influence adherence to therapeutic medical regimen among hypertensive United States Virgin Islanders". This study is being conducted in fulfillment of my PhD requirements. The purpose of this grounded theory study is to explore the various factors that may influence hypertensive therapeutic adherence practices of the hypertensive United States Virgin Islander in relation to HTN.

I am writing you to formally solicit your sponsorship. I understand that as sponsor for the study you will be my point of contact and CO-PI for the University of the Virgin Islands during the time needed to complete the study detailed above. Your sponsorship will allow me to gain access to the population of the Virgin Islands needed to complete this study. I am seeking two groups of participants. In the first group, will require a maximum of 25 participants who must be a United States Virgin Islander by birth or acculturation (Living on Island for 5 years or greater). These persons must be between the ages of 18-80. Person must have a self-reported diagnosis of hypertension. Person must have a diagnosis of hypertension for one year or longer and must have been placed on blood pressure medications by a health care professional. Each participant must be able to speak, read and write in English and must have access to a telephone. The second group of participants will be considered the expert group and will be used to verify themes identified in the individual participant interviews from group I. These participants must be a United States Virgin Islander by birth or acculturated (Living on Island for 20 years or greater) between the ages of 50-85 years of age. Individuals must have a self-reported diagnosis of

hypertension. They must have a diagnosis of hypertension for 20 years or greater and must be able to speak, read and write in English. The expert group of participants must be on blood pressure medications by a health care professional and must have access to a computer. Each participant will receive a $25.00 gift for their participation in this study.

Your consent to become my sponsor will require that reply to this letter formally indicating that you do indeed agree to serve as my sponsor. Please sign and date your letter and then return this me via email at

Thank you for your consideration in being my sponsor so that I may have access to my population of interest. If you have questions or need further clarification as to the requirements for my study, please feel free to give me a call at . You may also contact my dissertation chair and university sponsor You may also contact the Barry University IRB contact person .

Sincerely

Jamelah A. Morton MSN, ARNP, ACNP-BC, CCRN, CNRN

Barry University

PhD Student

University of the Virgin Islands

Historically American...Uniquely Caribbean...Globally Interactive...

School of Nursing – Caribbean Exploratory (NIMHD) Research Center
#2 John Brewers Bay, St. Thomas, VI 00802

February 5, 2016

Jamelah A. Morton MSN, ARNP, ACNP-BC, CCRN, CNRN
Assistant Professor
College of Nursing and Health Sciences
11300 NE Second Avenue, Miami Shores, FL, 33161

Dear Ms Morton:

I am pleased to serve as your sponsor to conduct research on critical factors that influence adherence to therapeutic medical regimens among hypertensive United States Virgin islanders. There is a great need to document the health care experiences of the Virgin Islands population. This study findings will provide much needed information to guide future approaches to address a major health condition of Virgin Islanders.

I look forward to working with you.

Sincerely:

Gloria B. Callwood, PhD, RN, FAAN
PI and Director, CERC

Phone (340) 693-1178 Fax (340) 693-1148
CERC Website http://cercuvi.com
Grant No. 5-P20MD002286

Appendix D

Let's Heart Disease

Study Individual Participants Needed

- **Individual must be a United States Virgin Islander by birth or acculturated (Living on Island for 5 years or greater)**
- **Persons between the ages of 18-80**
- **Person must have a self-reported diagnosis of hypertension for one year or longer.**
- **Person must have been placed on some mode of blood pressure management by a health care professional**
- **Each participant must be able to speak, read and write English**
- **Must have access to a telephone**

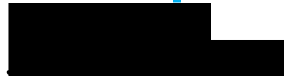
Come help find a way to combat this relentless illness.

One 100-minute interview required

Financial reward of $25 American Express gift card for your time

CONTACT INFORMATION

Researcher: Jamelah Morton MSN, ARNP, ACNP-BC*



Faculty Sponsor: **PhD, RN, FRE, FAAN**

Barry University Institutional Review Board:

University of the Virgin Islands research sponsor:

Appendix D

Let's Heart Disease

Study Individual Participants Needed

- Individual must be a United States Virgin Islander by birth or acculturated (Living on Island for 20 years or greater)
- Persons ages 50-85 years of age.
- Person must have a self-reported diagnosis of hypertension for 20 years or greater.
- Each participant must be able to speak, read and write in English
- **Person must have been placed on some mode of blood pressure management by a health care professional**
- Person must have a computer

Come help find a way to combat this relentless illness.

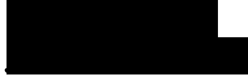
One 60-minute interview required

Financial reward of $25 American Express gift card for your time

CONTACT INFORMATION

Researcher: Jamelah Morton MSN, ARNP, ACNP-BC*

Faculty Sponsor:



Barry University Institutional Review Board:

University of the Virgin Islands research sponsor:

APPENDIX E

Third Party Confidentiality Agreement

Transcriptionist

Confidentiality Agreement

As a member of the research team investigating, Critical factors that influence adherence to therapeutic medical regimen among hypertensive United States Virgin Islanders. I understand that I will have access to confidential information about study participants. By signing this statement, I am indicating my understanding of my obligation to maintain confidentiality and agree to the following:

- I understand that I am an employee and my duties in this study is to transcribe recorded data
- I understand that names and other identifying information about study participants are completely confidential.
- I agree not to speak of, publish, or otherwise make know to any unauthorized persons or to publicize any information obtained during the course of this study.
- I understand that all information about study participants obtained or accessed by me in the course of my work is confidential. I agree not to divulge or otherwise make known to the unauthorized persons any of this information unless specifically authorized to do so by office protocol or by a supervisor acting in response to applicable protocol or court order, or otherwise, as required by law.
- I understand that I am not to read information and records concerning study participants or any other confidential documents, nor ask questions of study participants for my own personal information but only to the extent and for the purpose of performing my assigned duties.
- I understand that a breach of confidentiality may be grounds for disciplinary action, and may include termination of employment
- I agree to notify my supervisor immediately if I become aware of an actual breach of confidentiality or situation that could potentially results in a breach, whether this be on my part or on the part of another person.

Sharon Walcott	4/12/16	SHARON WALCOTT
Signature	Date	Printed Name
______________	______________	______________
Signature	Date	Printed Name

APPENDIX G
BARRY UNIVERSITY
DEMOGRAPHIC QUESTIONAIRE

Pseudonym (Chosen Name):

Age:

What is your sex?

- *Male*
- *Female*

Race/ethnicity

How do you describe yourself? (Please circle the one option that best describes you)

- *American Indian or Alaska Native*
- *Hawaiian or Other Pacific Islander*
- *Asian or Asian American*
- *Black or African American*
- *Hispanic or Latino*
- *Non-Hispanic White*

Education completed

What is the highest grade or year of school you completed?

- *Never attended school or only attended kindergarten*
- *Grades 1 through 8(Elementary)*
- *Grades 9 through 11 (Some high school)*
- *Grade 12 or GED (High school graduate)*
- *College 1 year to 3 years (Some college of technical school)*
- *College 4 years (College graduate)*
- *Graduate School(Advance Degree)*

Employment status

Are You Currently?

- *Employed for wages*
- *Self-employed*
- *Out of work for more than 1 year*
- *Out of work for less than 1 year*
- *Retired*
- *Unable to work*

Island or Country of Origin

- *St. Croix*
- *St. Thomas*
- *St. John*
- *St. Kitts/Nevis*
- *Antigua/ Barbuda*
- *Trinidad/Tobago*
- *St. Lucia*
- *Puerto Rico*
- *Dominican Republic*
- *British Virgin Islands*
- *Haiti*
- *Other* _________________

Number of Years living in the United States Virgin Islands

- *5-10*
- *11-20*
- *21-30*
- *31 and greater*

Healthcare Insurance

- *Yes*
- *No*

Number Years with Diagnosis Hypertension

- *1-5*
- *6-10*
- *11-15*
- *16-20*
- *21-25*
- *26-30*

- *31 and greater*

Primary Care Physician

- *Yes*
- *No*

Number of Anti-Hypertensive (medications to treat high blood pressure) Medications Taken Daily

- *1 Tablet*
- *2 Tablets*
- *3 Tablets*
- *4 Tablets*
- *5 or more Tablets*

Please Answer Yes or No to the following Questions

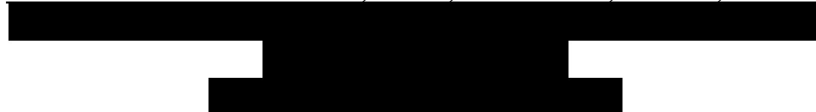
- *Have you ever eliminated taking your blood pressure medications?*
- *Yes*
- *No*
- *Do you deliberately omit taking doses your medications blood pressure medications regularly?*
- *Yes*
- *No*
- *Have you missed taking your blood pressure medications in the past week?*
- *Yes*
- *No*
- Do you ever use methods not prescribed by your healthcare provider to treat your high blood pressure
- *Yes*
- *No*

Appendix H

Barry University

Curriculum Vitae

JAMELAH A. MORTON, MSN, ARNP-BC, CCRN, CNRN



Education

Barry University
Miami Shores, FL
Doctor of Philosophy in nursing — 2013-Present

Barry University
Miami Shores, FL
Master of Science in Nursing/ACNP — 2005- 2008

Barry University
Miami Shores, FL
Bachelor of Science — 2003- 2005

University of the Virgin Islands
St. Croix, USVI
Associate of Science — 1994-1997

Employment Experience:

2013-Present
Assistant Professor
Barry University, College of Health Sciences
Miami Shores/FL

January 2009 to present
Advanced Registered Nurse Practitioner
Baptist Hospital, Miami, Florida

August 2002 to January 2009
Registered Nurse
Baptist Hospital, Miami, Florida

March 2002 to August 2002
Registered Nurse
Johns Hopkins Hospital, Baltimore Maryland

January 2002 to March 2002
Registered Nurse
Pan American Hospital,

Miami, Florida

November 1997 to December 2001
Registered Nurse
Juan F. Luis Hospital/Medical Center
St. Croix, USVI