EFFECTS OF A FAITH-BASED HEALTH DEVOTIONAL ON ILLNESS REPRESENTATION OF HIGH BLOOD PRESSURE IN AFRICAN AMERICANS

by

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This dissertation was prepared under the direction of the candidate's dissertation advisor, Dr. Cynthia Archibald, Christine E. Lynn College of Nursing, and has been approved by the members of her supervisory committee. It was submitted to the faculty of the Christine E. Lynn College of Nursing and was accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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ABSTRACT

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The African American population has persistently suffered a greater disease burden from uncontrolled high blood pressure than any other ethnic/racial group. There have been many attempts to reduce the health disparity but with little changes in adverse outcomes over the years. As African Americans are very religious and incorporate spirituality into their everyday lives, this research followed a faith-based approach and was conducted in the church setting. The study was guided by the Illness Representation Model (IRM) and the Theory of Culture Care Diversity and Universality (TCCDU).

One hundred male and female participants were recruited from five African American churches in Southeast Florida. Each participant met the inclusion criteria of being 35-80 years old, diagnosed with high blood pressure, members/attendees of a

Judeo-Christian church, and able to read and write English. A researcher-developed, five-day faith-based health devotional which included high blood pressure education infused with Bible messages was used as the intervention. A quasi-experimental design of pre and posttesting was employed to evaluate high blood pressure knowledge and illness representation. High blood pressure knowledge was tested using the High Blood Pressure Prevention IQ Quiz (HBPP-IQ) and illness representation tested with the Revised Illness Perception Questionnaire (IPQ-R). The results demonstrated statistically significant improvements in four out of the five hypotheses tested, with a caveat for the timeline representation (presented as two separate outcomes). The findings indicated: High blood pressure knowledge (HBPP-IQ): $p < .000$; Illness Representation (IPQ-R); timeline acute/chronic: $p = .003$; timeline cyclical: $p = .20$; consequences: $p = .024$; personal control: $p = .0005$; treatment control: $p = .002$. These results support the use of the faith-based teaching method in educating African Americans about high blood pressure as an effort that might improve illness representation in this population.

EFFECTS OF A FAITH-BASED HEALTH DEVOTIONAL ON ILLNESS REPRESENTATION OF HIGH BLOOD PRESSURE IN AFRICAN AMERICANS

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CHAPTER 1. INTRODUCTION

Phenomenon of Interest

High blood pressure is a condition where the blood pressure remains abnormally elevated, consistently registering above 130/80 mm/Hg (American Heart Association [AHA], 2017a). This condition is disproportionately represented in African Americans than any other ethnic/racial group (National Center for Health Statistics, 2017). Although high blood pressure is a modifiable risk factor, it still contributes to cardiovascular diseases, the leading causes of death in the United States (U.S.; Gillespie & Hurvitz, 2013; Kung & Xu, 2015). While only 13% of the U.S. population is African American, non-Hispanic African Americans comprise 42% of the total high blood pressure cases throughout the country (Nwankwo, Yoon, Burt, & Gu, 2013). The most recent National Health and Nutrition Examination Survey (NHANES: National Center for Health Statistics, 2017) confirms that this statistic has not changed over the past five years.

In an attempt to reduce health disparities, the Centers for Disease Control and Prevention (CDC, 2018) identified preventable chronic diseases (e.g., cardiovascular diseases, high blood pressure, obesity, diabetes mellitus, cancer, HIV/AIDS), and made it a priority to reduce the prevalance of these conditions in ethnic/racial groups like African Americans. One of the means to decrease these health disparities can be accomplished through community partnerships which also includes involving African American churches.

These types of partnerships are not new, in that health interventions have been conducted within African American churches for over 30 years, with the goal of reducing the high incidences of conditions like high blood pressure (Aycock, Kirkendoll, & Gordon, 2013; Berkley-Patton, et al., 2018). The African American church is a desirable venue for health professionals to partner with the faith-community since the church is essential in the lives of African Americans (Chandler, 2017). This agency is a place where many people gather to find refuge and assistance with multiple problems including matters relating to health (Rowland & Isaac-Savage, 2014). The church serves as a point of entry for healthcare practitioners to access this population.

Problem Statement

Despite decades of efforts to reduce the high morbidity and mortality rates associated with high blood pressure, the pervasiveness of adverse cardiovascular outcomes related to uncontrolled high blood pressure among African Americans persists (Abbott, Williams, & Slate, 2018; Gillespie & Hurvitz, 2013).

Purpose of the Study

The purpose of this study is to examine the effects of a faith-based health devotional on illness representation of high blood pressure in African Americans in the Southeast Florida church-going population.

Significance of the Study and Link to Caring Science

In 2016, the cost to treat cardiovascular conditions including high blood pressure in the United States exceeded $550 billion (American Heart Association, 2017b) which is up from $500 in 2010 (AHA, 2013; Lloyd-Jones, Adams, & Brown, 2010). The cost is projected to increase to over $1 trillion by 2035 (American Heart Association, 2017b).

Absence of symptoms associated with high blood pressure causes individuals to become lax about the diagnosis (Lewis, 2012), and due to the often asymptomatic nature of high blood pressure, there is a lack of comprehension of disease severity (Fuchs, 2011; Lewis, 2012; Ogedegbe et al., 2012). Since there are no perceived physical threats from the asymptomatic condition, Lewis (2012) suggests that a person's beliefs about the need for treatment loses priority. As a result, patients may be diagnosed with high blood pressure or seek treatment only after experiencing serious health events like a stroke or target organ damage (Amponsah, Tabi, & Gibbison, 2015; CDC, 2014). Treatments of these end-stage outcomes contribute to higher healthcare costs (American Heart Association, 2017b), whereas early detection and intervention would lessen the disease burden and cost of care.

Other important elements that contribute to the disease burden of high blood pressure are associated comorbidities of mental health conditions which increase cardiovascular risks. Depression has been implicated as a contributor to increased coronary artery calcification with subsequent atherosclerotic heart disease in African American women compared to Caucasian women (Lewis et al., 2009). Depressive symptoms have also been associated with worsened cardiovascular (CV) outcomes and less participation in CV health risk reduction in the general population (Kronish, Carson, Davidson, Muntner, & Safford, 2012). Anxiety disorders have a domino effect of overall poorer self-care, which lead to greater adverse CV outcomes (Kinley et al., 2015). Some of the related self-care deficiences from anxiety range from medication non-adherence, fewer health appointment follow-throughs, to avoidance of healthy habits including diet and exercise, all of which lead to diminished health.

Attempting to reduce the cost burden related to high blood pressure, one of the goals for Healthy People 2020 is to attain 10% reduction in high blood pressure prevalence in all adults (HealthyPeople.gov, 2018; U.S. Department of Health and Human Services [USDHHS], 2013). Another Healthy People 2020 initiative is to improve the health of society as a whole, rather than on individualized levels (HealthyPeople, 2018), which should be beneficial for lowering blood pressure in vulnerable, high risk ethnic/racial groups. Since African Americans are known to have higher morbidity and mortality rates associated with high blood pressure, the communal approach to high blood pressure interventions is practical. That is why the African American church remains a viable means of accessing this population for health research to help to lower the disease burden (Grigoryan, Pavlik, & Hyman, 2012; Rowland & Isaac-Savage, 2014). Additionally, involving the church is consistent with nursing caring principles which emphasize meeting patients at the place of their comfort and need (Leininger M., 1991).

The Significance of the African American Church and Faith on African American Health

In the seminal comprehensive work about African American theology, Cone (1970) identified the African American church as a sacred establishment within the community that is grounded in the theology of a God who is empathetic with the persecution that the people face within a greater society. Mellowes (2010) added that the African American church is a religious organization with African American congregants, and has doctrinal foundation in Judeo-Christian beliefs. Masci, Mohamed, and Smith (2018) suggest that 79% of African Americans identify with the Judeo-Christian faith

over other religious affiliations. Chandler (2017) elucidated the restorative and sustaining attributes that the African American church provide to individuals who were dehumanized by the early American culture of enslavement and segregation. Chandler continued that it was through establishing places of worship that people were able to find a sense of personhood, actualization, and belonging within a perceived "cruel society". In that way, the African American church serves as the lifeblood of the people and is a place of solace, refuge, and freedom. It also is the venue for spiritual guidance, life instructions, and health education (Avent & Cashwell, 2015).

The church as an institution is comprised not only of the building, but is also thought to in-dwell the people as highlighted in the scriptures (1 Cor 6:19) "do you not know that your bodies are temples of the Holy Spirit who is in you… you are not your own". This can be interpreted that people do not just gather in the edifice to worship, but they also carry the church within themselves. This premise sets up the foundation for deciphering the intricate intermingling of religion with spirituality that influences how African Americans express their faith. So, involving the African American church in health outreach is an important collaboration since the African American church has significant effects on health behaviors, and influences how members care for "the body temple" (Aycock et al., 2013, Marshall & Archibald, 2016). Research has established that faith-based interventions have demonstrated reduction in high-risk sexual behaviors (Archibald & Newman, 2015; Wingood et al., 2013), improvement in mental health, decreased alcohol consumption, smoking reduction/cessation (Berkley-Patton, et al., 2018), increased physical activity, healthier eating, and reduction in all-cause mortality (Bangurah, Vardaman, & Cleveland, 2017; Wingood et al., 2013).

Adding to the discussion of including the church in health outreach, Williamson and Kautz (2009) in their classic work, clarify differences in the types of faith-based or faith-placed studies which are conducted in African American churches. They identified faith-placed studies as those done within the church involving the church members, but includes exclusively health-related content even without doctrine. Faith-based research comprises the conditions of faith-placed, plus an integration of the sacred practices that are a part of the Biblical foundation of the church. Williamson and Kautz continued that the revered activities including rituals like reading scripture, praying, singing hymns, or exercising to gospel music, all add substance and meaning to the interventions.

Highlighting the importance of the function of the church, Johnson, Elbert-Avila, and Tulsky (2005) indicated that some African Americans decipher and cope with illness from the context of their faith, and rely on the church for their health decisions. This practice can support or hinder treatment choices. For instance, people who experience religious fatalism and perceive their illness as being punishment for wrongdoing may avoid acknowledging the presence of high blood pressure and subsequent treatment recommendations (Franklin et al., 2007). This perception may be because they believe that intervention will not have any benefit (Fallon, Bopp, & Webb, 2013). Consequently, Marshall and Archibald (2016), like Holt and McClure (2006) uncover the idea that African Americans may accept the reality of their health concerns and adhere to treatment regimens if positive health outcomes are correlated with Biblical messages. These correlations in turn become the gold-standard for African Americans' treatment choices (Holt & McClure, 2006). In such cases, the apparent health benefits could be attributed to being in alignment with the desires of God (Franklin et al., 2007).

Supporting this argument, Holt, Lee, and Wright (2008) recommend that researchers who conduct health interventions in the African American church should structure the content to include relevant faith messages as a part of the intervention, as such inclusion might yield greater outcomes and compliance.

This current research expands on that recommendation with the use of a faith-based health devotional booklet as the interventon. The devotional in this study is similar to the "Daily Bread" (Ceta, Knapp, Gustafson, Hudberg, & Markham, 2014), which is a quarterly devotional booklet produced by Our Daily Bread Ministries (Our Daily Bread Ministries, 2018); a 75 year old Christian organization which helps people to connect with God through its publications that are available globally. The Daily Bread guides the reader through Bible scriptures with relatable stories that depict life lessons. Reading a booklet like the Daily Bread allows for daily devotions and private time to study the word of God or practice spiritual meditations; and booklets like these are popular in religious groups (Lynn, Yoo, & Levine, 2014) like the African American church. The devotional in this study was developed like the Daily Bread with information about high blood pressure pathophysiology and management, paired with relevant Bible messages that relate to health. The devotional was used as an approach to assist the participants to understand high blood pressure and improve their illness representation about high blood pressure.

Multiple steps were involved in creating the faith-based health devotional. Firstly, using the constructs of the Illness Representation Model as guides (IRM: explained later in this paper), the researcher developed a theme for each day's teaching. Next, being a part of the African American church-going community, the researcher sought all the

scripture in the Bible that related to health. With that list of scriptures, the researcher then constructed short stories in which to relate high blood pressure scenarios and intertwine the health education. All of the stories chosen for the devotional were based on real-life situations. Once the stories with high blood pressure information were constructed, the researcher involved multiple pastors and church leaders who are experts in Bible content, and solicited their feedback on the appropriateness of the scriptures chosen in the scenarios. This process required months of consultation/reconsultation with the biblical experts prior to the final version of the devotional being approved.

Research Questions

In order to achieve the study aims, the following research questions were posed:

1. What is the effect of a faith-based health devotional on knowledge of high blood pressure and how to prevent it in African Americans?
2. What is the effect of a faith-based health devotional on select constructs of the Illness Representation Model in African Americans with high blood pressure?

Hypotheses

Based on these research questions, the following hypotheses were tested.

H_1. After using a faith-based health devotional, participants will score higher in general knowledge of high blood pressure and how to prevent it on the High Blood Pressure Prevention IQ Quiz (HBPP-IQ).

H_2. After using a faith-based health devotional, participants will demonstrate a statistically significant increase in the timeline scores on the Revised Illness Perception Questionnaire (IPQ-R).

H_3. After using a faith-based health devotional, participants will demonstrate a statistically significant increase in the consequences scores on the IPQ-R.

H_4. After using a faith-based health devotional, participants will demonstrate a statistically significant increase in perceived personal control scores on the IPQ-R.

H_5. After using a faith-based health devotional, participants will demonstrate a statistically significant increase in perceived treatment control scores on the IPQ-R.

Theoretical Framework

Illness Representation Model (IRM)

The common-sense model of illness representation or the illness representation model (IRM) was derived from the decades of research by Leventhal et al. (1997), Leventhal, Diefenbach, and Leventhal (1992), and Leventhal, Meyer, and Nerenz (1980) investigating how people conceptualize illness. These researchers have defined illness representation as patients' views and understandings of their illness, and how perceived threats to well-being trigger formulation of coping strategies to deal with disease. The perceived illness threats determine what choices people will make about their treatment. Leventhal et al. (1980) assert that people are active participants in the decision-making about their illness, and tend to regulate their treatment decisions based on their understanding of the condition rather than fear messages or coercion from healthcare providers. According to the IRM, the way people represent or interpret illness is determined by three sources of information: lay sources, external environment, and current illness experience.

Lay sources according to Leventhal, Diefenbach, and Leventhal (1992), are people who are the cultural or community associates who follow widely accepted beliefs and practices that are connected to an illness. Lay sources include neighbors, casual associates, church brethren (a church "brother" or church "sister"), and folk legends. An example of a lay source influence applicable to this current study would be a situation where one church member believes that wrapping in a sweat blanket will relieve a fever, and this belief is perpetuated in the communal members of the church. As a result, church members may opt to use sweat blankets to treat fever rather than other remedies.

The external environment includes personal contacts or authoritative influencers like parents, teachers, healthcare practitioners, and community leaders like pastors. Indeed pastors are often nurturers that provide guidance to maintain spiritual and mental health integrity along with the healthcare providers who enhance physical/emotional welfare. An external environment example is a grandparent who typically mixes a concoction of garlic tea to cure a stomachache. Thus the patient routinely drinks garlic tea in the event of a stomachache, rather than getting evaluated by a medical provider. A pastor may also recommend prayer and fasting to deal with illness, which would quite likely be the first-line of treatment chosen by the patient instead of medical care.

The expressed illness experiences associated with a condition enable the patient to incorporate previous coping strategies and personality traits into dealing with the disease. For instance, a woman may have had irregular menstrual bleeding in the past and was found to have a sexually transmitted infection that she contracted from her unfaithful spouse. In the future, if she again experiences irregular menses, she assumes it to be indicative of her spouse's infidelity. Leventhal et al. (1997, 1992, 1980) highlight that

when individuals create mental pictures of illnesses, the internal triggers based on the information gathered from the lay sources, the external environment, and/or their previous illness experience will determine the impetus to follow treatment; this is self-regulation. The IRM consists of five constructs that elucidate how individuals acknowledge, cope, and manage their conditions: Identity, causal mechanism, timeline, consequences, and controllability/curability.

Identity is the label that the person gives to the abstract symptom that he or she associates with a lived experience related to a disease. The label becomes a personally relevant and concrete health threat, which helps the individual to formulate a connection between the disease hazard and self (Leventhal et al., 1997). In the case of high blood pressure, a patient may interpret a headache as being related to blood pressure elevation. Whenever the sensation of aching in the head occurs, the patient uses past illness encounters, lay sources, and the external environment to justify labeling the feeling as being indicative of high blood pressure. However, this approach may be dangerous since high blood pressure is often asymptomatic. Waiting for an identifiable feeling related to blood pressure elevation may result in a stroke or target organ damage like kidney disease (Mozaffarian et al., 2016). Outcomes like these are examples of the greater morbidity from high blood pressure affecting/ailing the African American population (Mozaffarian et al., 2016).

The causal mechanism is the construct that addresses what individuals perceive as the origin of an illness. The IRM proposes that people may conclude that diseases are due to genetic predisposition, lifestyle/cultural influences, or environmental conditions. These factors may or may not be under volitional control. For instance, if family history or

genetic predisposition is viewed as the cause of an illness, this may authenticate non-adherence to treatment options due to the perception that lifestyle changes are irrelevant in a condition that is hereditary. Additionally, religious folklore also affects the perceived causes of illnesses in some African Americans when they believe that demonic influences or divine punishment creates health conditions (Franklin et al., 2007). This belief often results in the avoidance of medical care and resorting to the use of non-conventional healing methods (Franklin et al., 2007). Environmental conditions are included in the causal mechanism construct for when there is association made with an antecedent cause to illness such as stress, it then becomes a personal substantive representation for the condition (Leventhal et al., 1992). As an example, while the individual with high blood pressure may interpret high-stress conditions (e.g., work) or physical illness as the reason for the blood pressure elevation, removing the offending impulse (stress reduction or pain relief) may endorse the perception of being able to eradicate the disease (Leventhal et al., 1980). This perception may lead to undesirable actions like stopping medications and resuming unhealthy habits (which may worsen the condition). These illustrations highlight the importance of effectively educating African American patients about the comprehensive nature of high blood pressure, in order to help dispel some of the misguided associations that contribute to the morbidity from this disease.

The timeline construct addresses the perceived trajectory about an illness like high blood pressure: acute, chronic, or episodic (cyclical). The IRM suggests that people perceive acute conditions as being of short duration from two to 10 days. This construct of the IRM suggests that the same illness will be considered chronic with protracted symptoms greater than 10 days. For instance, if a person is admitted to the hospital for

high blood pressure, once sent home, taking prescribed medication as ordered would likely result in a normotensive state. However, such a person might not follow through with treatment advice, interpreting the high blood pressure as being acute or limited to the time of hospitalization. The person determines that high blood pressure is cured at the time of discharge. As multiple life events occur concurrently, and the person routinely notices the blood pressure being elevated, the IRM suggests that then high blood pressure is perceived as chronic and may persist as long as the external factors remain. In this instance, the person may conclude that remaining in a stressful job will be the reason for the high blood pressure diagnosis and may adhere to medication schedules while employed. However, if the job situation changes then the routines of medication use may also change.

A cyclical or episodic timeline perception about the presence of high blood pressure may be influenced by an individual checking the blood pressure only when prompted by a perceived symptom or cause. This is the time the blood pressure is noted to be elevated. Since blood pressure is not routinely checked in the absence of symptoms or a perceived cause, the elevation in pressure is not otherwise detected, and high blood pressure is then considered to be cyclical.

The consequences construct includes the negative physical, psychological, economic, or social effects that patients often correctly perceive to result from the illness. These consequences can be physical/mental incapacity, economic stresses, or family-related issues. The consequences can either be underestimated or overestimated depending on factors that the person uses to define them. For instance, patients may determine that skipping doses of medication may be acceptable if there are no perceived

adverse outcomes since in their minds, periodically taking medicines is better than complete abstinence. Additionally, there may be perceived negative consequences to adhering to treatment such as medications costs or side effects, which can result in complete treatment avoidance. There also may be the apparent consequences of financial deficiencies (restrictions on working and generating income) and strains on family relationships (inability to enjoy certain foods with the family due to dietary restrictions). The level of perceived penalties can ultimately detract from adherence to treatment recommendations and could trigger justification for total avoidance of treatment.

The controllability or curability construct highlights the tools that individuals perceive can be incorporated to manage or cure the condition. These approaches include heeding healthcare providers' recommendations, taking medications, involving social influences, and using coping strategies. Controllability is further divided into two categories namely, personal and treatment control. Personal control encompasses societal factors and coping tactics that patients incorporate into managing their disease. These can involve church support, friends who decide to exercise together, joining a fitness center, and other means of incorporating outside social elements and personal action to impact the condition. Treatment control is the perception about how adhering to treatment will positively impact disease outcomes. These steps include taking medications as prescribed, healthy eating, smoking cessation, observing sodium restrictions, and weight loss to manage high blood pressure. Personal and treatment controls both contribute to desirable results, including longevity and improved quality of life.

The constructs of illness representation uncover some of the challenges which nurses face when dealing with patients who have high blood pressure. For instance,

absence of symptoms produces a major hurdle for treatment, since lack of symptoms serves as a barrier to acknowledging the existence of high blood pressure and managing it (Lewis, 2012). Leininger (1991) adds that cultural beliefs are influencers of health decisions in people of varied ethnicities; therefore, it is important for nurses to be mindful of such ideals and determine how those ideals factor into patients' health behaviors.

Since high blood pressure is so prevalent in African Americans, this nursing research was structured using concepts that explore the cultural variable of faith and how it affects high blood pressure illness representation. As faith can influence health choices in African Americans, it was warranted to inquire about the connection between the two.

Theory of Culture Care Diversity and Universality (TCCDU)

In the post-World War II era of the early 1960s, the United States (U.S.) was at a crossroads in healthcare. Many people from various countries came to the U.S. needing healthcare. Nurses were faced with caring for sick patients of different cultures, nationalities, and religious persuasions, and encountered challenges in their care delivery (Leininger & McFarland, 2010). The challenges arose from the nurses not undertanding the culture and ideals of many of the patients, which was hindering how the patients responded to care. This resulted in frustration and disconnect on the parts of both the nurses and the patients. To better understand the dynamics of the overall nursing environment related to the disconnect, Leininger (1991, 1995) inquired into ways for nurses to gain knowledge about and how to effectively care for people of diverse cultures. That inquiry resulted in the formulation of the Theory of Culture Care Diversity and Universality (TCCDU; Leininger, 1991, 1995; Leininger & McFarland, 2010). Some of the major tenets of the theory include using cultural information to deliver therapeutic

patient care, understanding the influence of social structures like religion on health practices, and recognizing the differences that generic care (folk traditions) and professional care (formalized healthcare) have on health decisions. The ultimate goal of the theory is to deliver culturally congruent nursing care that is customized for the lifeways and beliefs of the patients. The lifeways are the meaningful ideals and practices that guide the patients' existence (Leininger, 1991, 1995; Leininger & McFarland, 2010). The aforementioned tenets of the TCCDU help to define the theory, and are discussed in more detail.

The first tenet of the TCCDU involves the use of cultural information to deliver therapeutic patient outcomes. Leininger (1995) surmised that if nurses take time to discover the specific cultural beliefs that patients have, and understand the historical context of some of those beliefs, nurses would have a tighter grasp on the influence of such practices on patients' health behaviors. This understanding would help nurses to be empathetic in their care delivery when dealing with patients of various cultures. For instance, when dealing with African American patients who have high blood pressure, acknowledging the foundational role that faith and reverence to God play by incorporating faith practices into nursing care, might enhance patient acknowledgement of the presence of high blood pressure and subsequent treatment reception.

The second tenet is understanding the influence of social structures, religion/spirituality, family ties, economics, education, and environment on health. This holistic approach to patient care encourages the nurse to enter the patient's social world in order to understand the various experiences that affect health behaviors. This tenet further endorses the value of incorporating the African American church as a means of

health education since the church is an important social structure in the African American population.

The third tenet of the TCCDU stresses cognizance of the influence of generic care and professional care on health decisions. Leininger (1991) identified generic care as the indigenous healing practices which are passed through generations and may be chosen by patients as first-line approaches to treatment. Professional or formalized healthcare is usually administered by trained health professionals in a specific treatment environment. While professional care may be ideal, Leininger underscored the importance of recognizing the gaps that culture may create in the patient's choice of the type of care to follow. Since beliefs about sickness have been documented as factors in treatment avoidance (Franklin et al., 2007; Lewis, 2012), understanding the influence of generic/folk practices on choices about high blood pressure is important when dealing with African American patients.

With guidance from the tenets of the TCCDU, in an attempt to expand research on the health disparity of high blood pressure prevalence in African Americans, the current study targeted this population who has unique cultural norms and perceptions toward disease. Leininger & McFarland (2010) highlight the importance of conducting research that is culturally-congruent to the lifeways of population of interest. The lifeways in this instance encompass the multiple factors that contribute to accepting, understanding, and managing high blood pressure. The tenets of the TCCDU are used to underpin this inquiry by allowing the influences of African American culture, social structures, and both generic plus professional care to guide the intervention. This is in keeping with the awareness that the African American church plays an integral role in the

lives of African Americans and ultimately impacts health beliefs and outcomes (Leininger & McFarland, 2010; Scott, Spees, Taylor, & Wexler, 2010).

In summary, the IRM highlights how illness triggers fear in people/patients who develop coping strategies, which determine how they approach treatment. Through self-regulation, patients formulate representations of illness which serve as motivators to reduce the perceived disease threat. These representations are developed from various sources of information including community and personal contacts, as well as previous illness experiences. The constructs of the IRM explicate how patients perceive the disease threat and determine what will prompt them to take steps in order to manage the condition. The TCCDU highlights how patients of various backgrounds incorporate factors of culture, social influences like religion, and generic/professional care into their health decision-making. Figure 1 illustrates how the philosphies of the TCCDU and IRM are merged in this current research to develop the five day faith-based health devotional. Based on the TCCDU, nurses ought to be aware of the culture of African Americans: They are mostly Christian, they gather in essential social structures like African American churches, and have a folk tradition of using devotionals as a part of their daily meditations to God. The IRM proposes that patients use lay sources (friends, church brethren), the external environment (churches that set spiritual foundations, and leaders like pastors, etc.) and past illness experience to form “representations” about their illness. These representations are further clarified through five constructs; identity, causal mechanism, timeline, consequences and control. The researcher in this study used those five constructs of the IRM and created the five-day devotional/educational booklet, focused on one construct per day. The education encompassed a daily scenario based on

the theme of each construct, and combined high blood pressure information with Bible scripture. The faith-based devotional was intended to increase knowledge and illness representation of high blood pressure. Increased knowledge would hypothetically increase the illness representation. Increased illness representation and knowledge about high blood pressure theoretically should lead to increased patients understanding and perceptions of high blood pressure, which could in turn translate into patients' participation in disease management strategies including medication adherence.

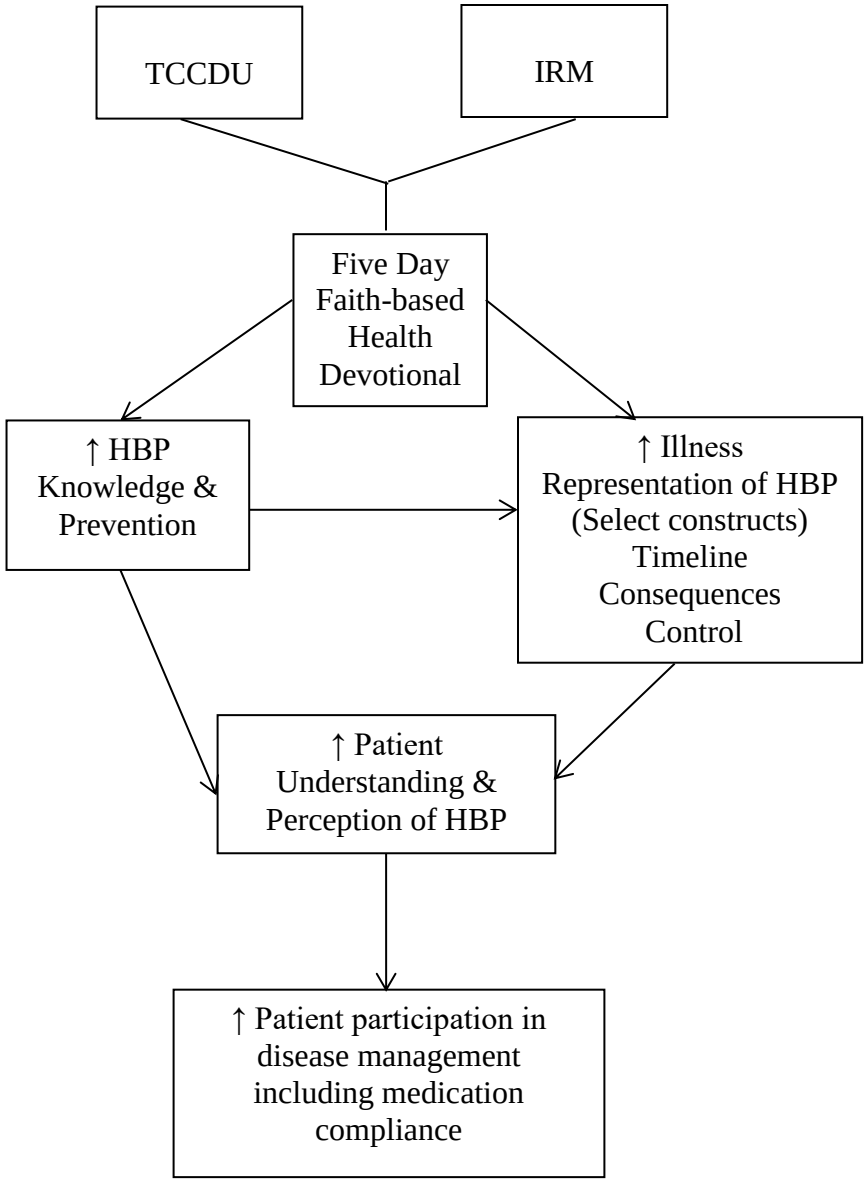


Figure 1. Merging of the TCCDU and IRM to create the faith-based health devotional which is intended to increase HBP knowledge and illness representation of HBP. Increasing these would lead to better understanding and perception about HBP which could translate into patients' participation in disease management strategies including medication adherence.

Definition of Terms

African Americans. "A person having origins in any of the Black racial groups of Africa" (United States Census Bureau, 2018, paragraph 2). This study includes people who self-identify as African American, comprising those of African heritage from the U.S. and other countries like the Caribbean and Canada.

African American Church. A religious establishment within the African American community that encompasses the identity of the people and is grounded in the Judeo-Christian theological beliefs in a God who is empathetic with the struggles of the people (Cone, 1970).

Faith. A combination of religion and spirituality which facilitates the gaining of knowledge through scriptures (McClendon, 2012), and enhances interaction with the higher-power-God through prayer and related practices (Lynn et al., 2014; Wosh, 2017). Faith also allows for the forming of interpersonal associations with like-minded people through fellowship and church attendance (Alawiyah-MHum, Bell, Pyles, & Runnels, 2011). The relationships allow individuals to live those alliances authentically and express their core beliefs about their God (Dyess, 2011) while enhancing personal wholeness (McClendon, 2012).

Faith-based Health Devotional. A booklet developed by the researcher that includes information about high blood pressure pathophysiology and management, combined with Biblical scriptures that relate to health, delivered in the form of stories. It is structured as a five-day booklet, with each day's reading based on one construct of the Illness Representation Model. This is a devotional that has the beliefs as the base of the health information.

Illness Representation. The patient's belief and understanding of a medical condition, and the factors used to clarify the personal disease threat and guide treatment choices to reduce the perceived danger from the condition (Leventhal et al., 1992).

Knowledge. Information that a person gathers through formal and informal education, personal experiences or inquiry, and is assigned meaning based on the person's understanding (Bates, 2005).

Religion. (Essential components of the African American church). The ritualistic practices and doctrine associated with organized worship, grounded in the teachings of a transcendent Super-Human Being or God (Lynn, Yoo, & Levine, 2014).

Spirituality. The internalization of positive sacred values that form relationships with the transcendent Super-Human Being, but may not be rooted in religious rituals (Alawiyah-MHum, et al, 2011). Spirituality often translates into unconditional love and connections with people, and helps with discovering the meaning in life (Alawiyah-MHum, et al., 2011; Lynn et al., 2014).

Summary

High blood pressure is an illness that poses a major problem in the African American population (Aycock et al., 2013). Non-adherence to treatment regimens related to lack of acknowledgement of the severity of high blood pressure (or reduced illness representation) has been implicated in the increased burden of disease (Prado & Mion, 2010). One way to influence patient illness representation, as suggested by Leventhal et al. (1992), is to present the illness danger message and a disease-modifying action plan simultaneously that is consistent with patients' beliefs. Leininger (1991) also emphasizes the need to incorporate cultural ideals into disease management of patients with diverse

ethnicities, like African Americans. It is with these understandings that Leventhal et al. (1997), Leventhal et al. (1992), and Leventhal et al.'s (1980) IRM and Leininger's (1991, 1995) TCCDU were used to guide this inquiry into the effects of a faith-based health devotional on the illness representation of high blood pressure in African Americans. The goal was to increase African Americans' knowledge about and illness representation of high blood pressure as a serious health threat.

Organization of the Study

The subsequent chapters of this study are organized in the following manner: Chapter 2 discusses the review of the relevant literature; Chapter 3 covers the design and methodology; Chapter 4 explains the results, and Chapter 5 reviews the discussion, conclusions, and study implications.

CHAPTER 2. LITERATURE REVIEW

Introduction

This chapter is a comprehensive review of the literature that is relevant to this research. Included are studies that discuss illness representation of various diseases in heterogenous study populations. There are also studies that review research done in African American churches that focus on chronic diseases that are relevant to the population. These include studies of conditions that are on the CDC (2018) list of priority targets (cardiovascular diseases, obesity, diabetes mellitus, cancer) as well as HIV/AIDS. The literature presented in this chapter are chosen since in conducting the literature review, it was noted that there are limited studies that focus on illness representation of high blood pressure or other cardiovascular diseases in African Americans. There is also a dearth in any illness representation studies in the African American church. In organizing the literature review, studies that were conducted in the African American church are separated into categories of being faith-placed or faith-based, as the distinction has relevance to this current research. Illness representation studies are analyzed first, followed by faith-placed interventions, then faith-based research, and finally the gaps in these methodologies are discussed.

Critical Synthesis of the Literature

Illness Representation Studies

Lowe and Norman (2017) investigated the processes that influence how health threats trigger coping mechanisms to deal with illness. They used an associative-learning

framework to test illness representation and decision-making related to health threats. Guided by a connectionist-network that utilized the MATLAB computer software (MATLAB, 2013), they intended to generate and simulate human illness representation by pairing illness identities with illness beliefs and illness beliefs with coping techniques. Their approach was grounded in the opinion that repeated experiences with illness form memories through associative learning, and thus the interpretation of new illness experiences is related to memories about past experiences. An example referenced is when a person is faced with an unfamiliar new diagnosis, information about a past similar condition is used to predict the course of the current condition. The computer software learned information through backpropogation (a three-level auto-encoder constructed in the belief-based phenomena). Through this technique, four hypotheses were tested, all of which were supported. The simulation demonstrated associations between illness labels (identity) and illness beliefs, and between beliefs and coping. Illness identity triggered appropriate coping strategies. Inadequate information about a new illness may have caused exaggerated responses that affect how the new illness is perceived. Representations of illness and coping evolved as the interpretation of symptoms changed. The implications of the study are that through simulation with computer software the researchers were able to demonstrate that activation of illness beliefs and encoding occur automatically and sponteneously. Additionally, multiple factors impact illness representation and may encompass a set of dependent beliefs rather than independent elements. There is also inference that there is a potential for maladaptive coping based on illness representations, since the representations may have been formed quickly and as a reflex response to illness. The strength of this study is that multiple variables of illness

representation were evaluated using reliable software in the context of the associative-learning theory. The gap is that it was a simulation using a software program and no human subjects were involved.

In a cardiovascular intervention evaluating illness representation, Turrise (2016) conducted a prospective correlational study on 96 heart failure patients who were hospitalized with heart failure at a regional hospital in Southeastern North Carolina, then discharged home. The aim was to evaluate the relationships between illness representations, medication adherence, treatment beliefs, and 30-day hospital re-admission for exacerbation of heart failure in older adults. Participants were 55 years or older, mostly male (60%), and the majority were Caucasian (73%), with African Americans represented at 26%. Through convenience sampling, participants were recruited and retained for the study that was done between August 2012 and March 2013. The intervention was accomplished through telephone surveys and then calls to follow up on the surveys. The variables were tested using three instruments: the Brief Illness Perception Questionnaire (Broadbent, Petrie, Main, & Weinman, 2006), Beliefs About Medicines Questionnaire (Petrie, Perry, Broadbent, & Weinman, 2012), and the Medication Adherence Report Scale (Vrijens, DeGeest, & Hughes, 2012). Data were analyzed with SPSS. Relationships among the variables were reported with correlational analysis Pearson's *r*. Logistic and hierarchical regression were used to evaluate independent and moderating effects of the variables. The results demonstrated that participants who perceived that medication was not controlling the heart failure had greater likelihood of re-admission to the hospital within 30 days of discharge (treatment control significantly related to hospital readmission: $r = .26$, $p = .01$). Statistical

significance related to hospital re-admission was not met with representations of identity (r = .06, p = .54), timeline (r = .06, p = .52), consequences (r = .11, p = .26) personal control (r = .03, p = .77), and necessity-concerns differential (r = .06, p = .54). Medication adherence was analyzed post hoc as a dichotomous variable. Personal control had an inverse relationship to medication adherence (r = -.20, p = .05) in that more perceived personal control was significantly related to less adherence to medication. Medication necessity-concerns differential was significantly related to medication adherence (r = .22, p = .02). This indicated that in participants who perceived the need for medication was greater than concerns about potential adverse effects, there was greater adherence. Logistic regression analysis demonstrated that perceived medication necessity (necessity-concerns differential) significantly predicted high medication adherence. Two-step hierarchical analysis found that the years the participants were diagnosed with heart failure predicted how they identified symptoms associated with heart failure and how they adhered to medicines. Of all the constructs of the illness representation that were tested (identity, causal mechanism, timeline, consequences, and control/cure), only personal control was found to be significantly related to medication adherence (inverse relationship). The researchers discussed multiple potential factors as possible reasons for these outcomes, including lack of variability in medication adherence scores, fear of admitting medication non-adherence, social desirability of responses, and the wide-ranging questions on the Medication Adherence Report Scale (Vrijens et al., 2012). The strength in the Turrise (2016) study is that it evaluated illness representation of a cardiovascular condition. The gaps were that the researchers evaluated a majority of

non-African American participants, the study was not conducted in the church, there was no participant education about the disease, and knowledge level was not evaluated.

In a descriptive cross-sectional study, Stallings (2016) examined the relationships between high blood pressure illness representation, dietary behaviors, and exercise. The sample consisted of 204 African American women, ages 18-65 years, who were diagnosed with high blood pressure. Participants were recruited from five churches (two in Tennessee and three in Mississippi) and one beauty salon in Tennessee. Data were collected at one time with a demographic sheet, a revised version of the Illness Perception Questionnaire (IPQ-R; Moss-Morris et al., 2002), a seven-day physical activity recall sheet, and the Fruit and Vegetable Quick Food Scan (Thompson et al., 2002). Additional biometrics data of blood pressure and body mass index (BMI) were collected. Pearson's correlation described the relationships between the constructs on the IPQ-R. Hierarchical multiple regression was used to evaluate relationships between high blood pressure illness repesentations on the subscales on the IPQ-R and outcome measures (physical activity, fruit and vegetable intake, and biometrics). The results showed that moderate-intensity physical activity was negatively associated with representations of high blood pressure being chronic and having environmental causes, and positively associated with emotional representations of high blood pressure. Emotional representations are positive or negative emotions regarding high blood pressure that can either enhance or detract from behaviors related to high blood pressure. Emotional representations was the only construct found to be associated with consumption of fruits and vegetables. There were no associations described between biometric results and the study variables. Biometrics were only included in the

descriptive analysis of the demographics. The strength in this study is that it directly evaluated illness representation of high blood pressure related to factors that impact cardiovascular health (diet and exercise) in African American church-going participants. Studies of this kind are sparse in the literature and add valuable information to this current research. The gap is that even though participants were recruited in the church, there was no mention of faith-based content in the intervention. Additionally there was no participant education in the intervention and only female participants were studied.

In a one-year study involving Caucasian French Canadian participants with hypercholesterolemia, Coutu, Dupuis, D'Antonio, and Rochon-Goyer (2003) evaluated the association between the illness representation of hypercholesterolemia (HCL) and dietary changes. A sample of 146 men (mean age 49.55, *SD* = 10.71) and 98 women (mean age 55.37, *SD* = 12.48) with a total cholesterol (TC) greater than 240mg/dL were recruited from a lipid clinic. The subjects were evaluated at baseline, three months, six months, and 12 month intervals. The method used for lipid lowering (low-fat diet alone versus low-fat diet with anti-lipid medication) and the amount of time on the lipid-lowering medication were evaluated. Illness representation was measured using the Cognitive Representation of Hypercholesterolemia Questionnaire (CRHQ; Rochon-Goyer & Dupuis, 1992), which is a five-point Likert scale that evaluates the perceived cause, consequences, symptoms, and timeline of hypercholesterolemia. Dietary intake was evaluated with the Food Record Rating (FRR; Remmell & Benfari, 1980), a standardized semi-objective scoring system that evaluates the average daily fat intake on three consecutive days. Results showed significant decreases in TC levels ($F[3, 217] = 16.1$, $p = .000$) throughout the year. There were significant reductions in the perception of

HCL as being chronic (p = .048) and perception of symptoms (p = .005). There was also significant reduction in fat intake (mean change score FRR = 0.92, SD = 4.96, N = 95). Those who perceived HCL as acute or cyclical had significantly worse dietary habits (mean change score of FRR = 3.00, SD = 5.6, N = 19). The findings supported the hypothesis that accurate representation of HCL at baseline would have signficant predicted improvement in dietary habits (p = .043). The strength in this study is that it examined a relationship between four of the constructs of the IRM on health behaviors associated with HCL. The gaps are that it was conducted in a homogeneously Caucasian population, neither culture nor faith was considered as factors in the outcomes, and participants' knowledge of the condition was not evaluated.

As a part of a large prospective one year study, McGrady, Peugh, and Hood (2014) evaluated the associations between illness representation and glycemic control in 99 adolescents and young adult ages 15-20 years. Data were collected three months apart at the last two visits of the larger study. Participants were all diagnosed with type 1 diabetes and were recruited from a children's hospital in the Midwestern United States. Survey data were collected using the Diabetes Illness Representations Questionnaire (DIRQ; Skinner et al., 2003) and the Self-care Adherence Inventory (La Greca, 1992). Blood glucose information was collected by meter downloads obtained through medical records. Structural equation modelling determined the relationships between the variables. There were significant predictive relationships between illness representations, self-reported glucose monitoring, adherence to emergency precautions, and overall self-reported treatment adherence. The results, however, did not demonstrate correlations between illness representations and adherence to insulin, hemoglobin A1C levels,

exercise, and food restrictions. While this was a valuable study that evaluated the relationships between illness representations and adherence/biometric outcomes in the chronic disease of diabetes mellitus, there were some noted gaps. The population studied were young adults thus generalizing the outcomes to the older population is affected, a specific ethnic group was not targeted, there was no participant education of study variables, and participant knowledge was not evaluated.

In a cross-cultural study to evaluate the relationship of illness representation of Human Immunodeficiency Virus (HIV) with self-care habits and health outcomes, Reynolds et al. (2009) collected data from 16 sites in international countries (United States, Norway, Taiwan, Puerto Rico, and Columbia). Over 1217 HIV positive participants (female = 31%, African American = 38%, Caucasian = 26%, Asian/Pacific = 10%) were included in the study which evaluated the five constructs of illness representation. Data were collected using the HIV/AIDS International Nursing Research Network Assessment Survey (Reynolds et al., 2009). This survey instrument is a self-report booklet that measures sociocultural illness severity context, self-care, and health outcome. Illness representation was measured using the Illness Perception Questionnaire (Weinman, Petrie, Moss-Morris, & Horne, 1996), self-care activities with the Self-care Symptom Management Scale (Chou, Holzemer, Portillo, & Slaughter, 2004), and quality of life with the HIV/AIDS-Targeted Quality of Life (AT-Qol; Holmes & Shea, 1999). Data were analyzed using linear regression analysis to examine the relationships between the constructs of illness representation, self-care behaviors, and quality of life. Results showed that less perceived control was correlated with less self-care activities (decrease of .029 points on a 0 - 1 point frequency scale). There were significant relationships ($p <$

.05) between perception of HIV timeline and self-care effectiveness. Perceptions of dismal illness trajectory were related to lower self-care effectiveness. Greater perception of control demonstrated better self-care effectiveness. Higher self-care efficacy was linked to improved quality of life, and the perception of more serious consequences was connected with poorer quality of life. While this was a large, culturally diverse study that addressed all five constructs of the IRM, there were some gaps in the intervention. Specifically, patient disease knowledge was not evaluated and participant education was not included. Additionally this was a heterogenous sample of participants, and no faith component was included in the study.

Faith-Placed Studies

In a faith-placed study to evaluate a high blood pressure self-management program, White (2018) studied 23 members from one African American church (the location of the study was not provided by the researcher). Using the Health Belief Model (Resource Center for Adolescent Pregnancy Prevention, 2018) to guide the inquiry, the researcher tested one group of participants who were 18 years and older and diagnosed with high blood pressure. A pre and posttesting design was used for the intervention. Participants demographics, blood pressure, and knowledge/attitude/practice (KAP) related to high blood pressure were evaluated pre-intervention. KAP was assessed with a nine-item survey developed by the researcher. Participants then engaged in a four-week American Heart Association (AHA, 2017a) program on self-management of blood pressure, after which blood pressure was again evaluated. Paired samples *t*-tests were run to evaluate changes in blood pressure. Additionally, correlations were made between the pre/posttest blood pressure readings and items on the demographic data sheet. Study

results demonstrated no post-intervention improvements in blood pressure. Other components of the study that did not gain statistical significance were correlations between demographic data and initial blood pressure screening or KAP. While the study was done with African Americans who were diagnosed with high blood pressure and was done in the church, there were many notable gaps in the intervention. The first gap is that the intervention was standard AHA teaching and did not include any salient doctrinal messages. Second, while participants' knowledge was evaluated using a researcher-developed method, the outcomes data were not presented, but were reported by the researcher to not be significant. Third, the sample consisted of only 23 participants and was done at only one venue.

In a stroke prevention study titled "Turn the Beat Around", Williams, et al. (2015) conducted a 12 week intervention with 201 members from nine African American churches in Alabama. Participants ages ranged between 20-74 years. The goal of the study was to evaluate the feasibility of trained community health workers (CHWs) delivering the content, and test the effects of the intervention on participants' knowledge of high blood pressure, stroke, and cardiovascular diseases (CVD). Additionally, changes in blood pressure, weight and physical activity were measured, and constructs of the Transtheoretical Model stages of change, were evaluated (Prochaska, Redding, & Evers, 2008). The CHWs delivered the education in six sessions from the National Heart Lung and Blood Institute's (NHLBI) curriculum entitled "With Every Heartbeat is Life (WEHIL; Ralston, et al., 2014, Shah, et al., 2013). The WEHIL is an evidence-based, culturally specific program for African Americans, which educates on CVD risk reduction. One group of participants was evaluated pre and post the WEHIL intervention.

Results showed statistically significant improvements in knowledge ($p < .001$) and systolic blood pressure ($p = .0008$) after the intervention. The Stages of Change also demonstrated improvement post intervention, with beliefs about healthy habits ($p < .0001$), and improved reports about general health ($p = .0042$). There was no statistical significance in weight loss after the intervention ($p = .1380$). The study results supports the feasibility of using CHWs and partnering with the church as a means of increasing stroke prevention and high blood pressure education in the African American population. The strength of the study is that it included both high blood pressure and CVD education that was culturally tailored to African Americans, as well as it was a moderately-sized faith-placed study. The gap is that there was no integration of Bible messages or salient spiritual practices in the intervention.

Reach Out Churches was a pilot study to evaluate the feasibility of using mobile health outreach to reduce high blood pressure in African Amercicans, versus usual care (Skolarus, et al., 2018). This was a community-based participatory research approach (CBPR) conducted in Flint, Michigan, with 94 African American participants randomized from area churches. The researchers used the Self Determination Theory (SDT; Ryan & Deci, 2000) to underpin the study. The SDT has constructs which determine the motivators of behavior change which are *competence* (the person's belief that he/she can carry out a behavior), *autonomy* (the ability to control the behavior) and *relatedness* (how the person relates to others in similar situations). Participants were randomized to two groups. The control group included pretest blood pressure evaluation and materials on high blood pressure from the American Heart Association (AHA, 2017a). The intervention group involved self-monitoring/reporting of blood pressure, and three

different types of text messages (texts about the individual blood pressure readings, texts with instructions on healthy habits related to the blood pressure readings, and texts with general health messages). The study was conducted over six months. The results demonstrated no between-groups difference in blood pressure readings pre and posttest. However with the overall study findings, the researchers reported that the study supported feasibility of this mobile outreach approach as a health intervention to decrease high blood pressure in the African American population. The researchers noted some strengths in the study which included willingness of the participants to engage in research, being able to partner with the church to reach large groups of people, through mobile health having access to people at high risk for CVD who would not otherwise seek healthcare, and participants' agreeing to self-monitor and report their blood pressure readings. There were also limitations to the study which include the 22% attrition rate, technical difficulties with the text messaging which affected participants' ability to text their blood pressure readings. The gaps in this study is that participant knowledge of high blood pressure was not evaluated. Additionally there was no faith messages included in the content, as the researchers pointed out that participants in the intervention group did not want religious content to be included in the text messages.

In a study to evaluate the efficacy of an education/screening program to reduce risk factors for CVD, stroke (CVA) and diabetes mellitus (DM), Frank and Grubbs (2008) conducted a study with 120 participants from four southern rural African American churches. The intervention was incorporated into the mid-week Bible study or the Sunday worship service. Implementation consisted of the pastor incorporating health into the sermon, afterwhich the researcher was introduced. The intervention involved

pretesting, a 20-minute educational session, posttesting, evaluation of biometrics (BMI, blood pressure, glucose), and healthy snacks. Chi-square, *t* tests, and ANOVA were used to analyze the data. The results did not demonstrate statistically significant improvement in knowledge after the intervention ($p = .75$). For participants who were found to have normal blood pressure versus high blood pressure, there was no significant increase in knowledge from pre to posttest in the normal blood pressure group (pretest $p = .48$) and posttest ($p = .98$). The researchers pointed out some important findings in the study. The participants who self-identified as having high blood pressure scored lower on the high blood pressure knowledge test. This finding suggests there is need for more education in this group and increasing awareness of the need to seek urgent/emergent care in the event of serious blood pressure elevations. Participants who were in the younger age group (18-30 years) and older than 60 years scored lowest in the pretest knowledge tests than middle-age participants (31-59 years). This finding indicates the need for education to target these groups as well as preventive education in the younger group. The researchers pointed out that there was difficulty keeping the particpants engaged and having them follow through with completing the posttest. Additionally there was a need to have special assistance to help the elderly participants with the study instruments due to possible limited health literacy, hearing and vision problems. The researchers also acknowledged that the study demonstrated a need for more involvement of health professionals in church health outreach. While this Frank and Grubbs (2008) study was a faith-placed study that seemed to have some faith-based components by implementing the intervention during Bible study, the gap is that the researchers did not indicate that Bible messages were directly included in the intervention.

In a classic study to evaluate the efficacy of high blood pressure education and social support on blood pressure management in people with high blood pressure, Smith, Merritt, and Patel (1997) conducted a six-month intervention on 97 participants from 11 African American churches in Chicago. The mean age was 62 years with the majority females (84%) and married (29%). The implementation was done in two phases. In phase one, registered nurses within the churches were trained as certified health educators (CHE), and lay persons trained as facilitators/organizers for the study. In phase two, the CHEs provided the education on blood pressure management in eight, one-week sessions. Data were collected at baseline, post-intervention, and three months post-intervention. The instruments used were the Hypertensive Data Record (Powers & Jalowiec, 1900), which measured high blood pressure risk factors, history, and complications; the Hypertension Knowledge Test (HKT; Powers & Jalowiec, 1900), which assessed high blood pressure knowledge and management practices; and the Social Support Network Inventory (Flaherty, Gaviria, & Pathak, 1983), which evaluated participants' perceptions of their church members' social support. Data analysis was accomplished with repeated measures ANOVA (perceptions of social support and changes in blood pressure [B/P]), multiple linear regressions (relationships between B/P, demographics, and social support), and stepwise regressions (variables that explained B/P). The results demontrated significant increase post phase one and phase two from pretest in the high blood pressure knowledge base ($p \leq .0001$; $F = 95.08$; $df = 1,79$), medication knowledge ($p \leq .0238$; $F = 5.39$; $df = 1,57$), and combined scores ($p \leq .0001$; $F = 28.80$; $df = 1,57$). There was also significant decrease in systolic blood pressure (SBP) from pretest to posttest one and posttest two ($p \leq .0001$). While the Smith, et al. (1997) study included

participants from various churches, incorporated high blood pressure education, and evaluated high blood pressure knowledge, there was a gap in the intervention. The gap was that this was a faith-placed only intervention and no scripture was included in the content of the study.

In another classic work conducted in four North Florida African American churches, Turner, Sutherland, Harris, and Barber (1995) described in their two-year long study the development and implementation of a culturally tailored program. The intervention was intended to increase awareness of cardiovascular disease (CVD), improve blood pressure readings, and increase healthy nutrition and physical activity. In the first year there were 297 participants, and in the second year participation increased to 343. Pre and posttest surveys were given to determine changes in behavior. Independent samples *t* tests were run to determine changes in health behaviors and blood pressures. The results demonstrated improvement in SBP (mean = 129.2 in 1991 and 126.2 in 1992), decreased consumption of unhealthy foods, and change in exercise days (5.05 days/week in 1991 and 5.36 days/week in 1992). While this was a moderately sized, culturally-tailored study for African Americans, there was a gap in that faith messages or practices were not incorporated into the intervention.

In a six-month diet and exercise intervention conducted in eight African American churches in the lower Missisippi delta, Tussing-Humphreys, Thomson, Mayo, and Edmond (2013) engaged 336 participants (control N = 173, test N = 163), with a mean age (control = 46 years, test = 47 years). The study was a quasi-experimental design with retention rates of 85% for the control group and 84% for the test group, and evaluated various levels of behavior change. Data were collected using the Rapid

Assessment of Physical Activity (RAPA; Topolski, et al., 2006) tool and Delta Food Frequency Questionnaire (Delta FFQ; Tucker et al., 2005). Biometric data of body mass index (height and weight), blood pressure readings, glucose, and cholesterol were also obtained. The result showed significant improvement in fruits and vegetables consumption in both the control and test groups and 22% increase in physical activity in the test group only. There was no significant difference in biometric data after the intervention. Lack of intervention effect in the diet variable was possibly due to the level of participation. The strength of this study was that it was performed as a community partnership in an area with high incidence of cardiovascular disease. The gaps in the study are there was no direct incorporation of faith messages or practices into the intervention. Additionally, participants' knowledge of the study variables was not evaluated.

In a study evaluating the efficacy of a church-based intervention on obesity in African American women, Christie, Watkins, Weerts, Jackson, and Brady (2010) had 383 participants complete a 24 week program that included nutrition education, one hour of physical activity, cooking demonstrations, and social support. They measured weight, body mass index (BMI), waist-hip circumference, blood pressure, random glucose, and daily minutes of physical activity. Participants were evaluated at baseline, 12 weeks, and 24 weeks. Both male and females were included in the data collection; however, only the data on the female participants were discussed in the outcomes. The authors did not discuss the theoretical underpinning of this research in the publication of the findings. There were significant differences in all values with the exception of random glucose. Measuring weight, there were $\pm$ 2.34 pounds lost at 12 weeks and $\pm$ 2.11 pounds at 24

weeks. Body mass index changed from a mean of 34.84 at baseline to 34.21 at 12 weeks and 33.44 at 24 weeks. Waist-hip circumference was .85 at baseline, .84 at 12 weeks, and .83 at 24 weeks. Systolic blood pressure decreased from baseline 131.10 $\pm$ .97 to 129.28 $\pm$ .77 at 12 weeks, and 127.79 $\pm$ .76 at 24 weeks. Physical activity increased from 64.37 minutes/week at baseline to 157.95 at 12 weeks and 169.19 at 24 weeks. Random glucose averaged 110 at baseline, 113 at 12 weeks, and 112 at 24 weeks. Even though this was a moderate-sized intervention conducted over 24 weeks, the gaps in this study were that faith messages or practices were not a part of the intervention. Additionally illness representation was not a study variable.

In a classic work addressing diabetes education strategies in African Americans, Scollan-Koliopoulos (2004) discussed using the health belief model (HBM; Clark & Becker, 1998) versus the Roy adaptation model (RAM; Roy & Andrews, 1999) as theoretical grounding for an intervention to prevent diabetes-related amputations. The pilot study involved a small group (N = 20) of African American members from a New Jersey church who all had type 2 diabetes. The researchers used instruments based on the HBM. The education session was done after church service, in the church basement, by the church health educator. Amputation risk knowledge and health beliefs about amputation were evaluated after which a 15 minute video entitled *Caring For Your Feet* (American Diabetes Association, 2001) was played. The likelihood of participants partaking in amputation-prevention strategies was evaluated afterwards. Post-intervention, 100% of the participants affirmed that they would most likely engage in activities to prevent diabetes related amputations. While the study did address an important chronic condition in African Americans (amputations related to diabetes

mellitus), the gaps include the small sample size (N = 20) and the absence of direct incorporation of faith messages into the intervention.

In a feasibility study to increase prostate cancer screening knowledge and promote self-efficacy in decision making among African American men, Drake, Shelton, Gilligan, and Allen (2010) conducted a study with 73 participants from seven African American churches in the Boston and Cambridge, Massachusetts areas. They used a research tool called the road map for data collection, which is a drawing that was created and tested by the researchers. The road map graphically displays the benefits and consequences of engaging in or forgoing prostate cancer screening. The intervention was a one-time, 30-60 minute education session, done with a small group by an African American male health educator. A quasi-experimental design with pre and posttest self-administered surveys was used for data collection. This pilot study demonstrated a significant increase in prostate cancer screening knowledge ($p < .001$), by an average 25.7 percentage points, and self-efficacy ($p = .025$), by an average 8.9 points. While this study included participant education about a chronic disease that is significant to African Americans, the gaps were the exclusion of faith messages and illness representation was not a study variable.

In a study to evaluate participation in prostate cancer screening after receiving prostate cancer education, in their classic work Weinrich et al. (1998) used the cues to action approach of the Health Belief Mode (Rosenstock, 1990) as guidance for their education program. This intervention involved 497 African American men from 218 African American churches in South Carolina. The men were given a voucher to get free prostate cancer screening with a provider of their choice. There were four education

interventions: (a) traditional (control group) – slide show with question and answer, (b) peer educator only – a person of the same race and socioeconomic status (SES) who gave a testimonial on the benefits of screening and encouraged the group to get tested, (c) client navigator – helped the men to find a provider and set up an appointment for prostate cancer screening, and (d) a combination of peer educator and client navigator. They found that 357 (71.8%) participated in prostate cancer screenings. Having a church member with previous prostate cancer was a significant cue to action. The data did not support their three hypotheses that addressed individual cues on engaging in prostate cancer screening: There was no significant difference in prostate cancer screenings between men who heard or read about prostate cancer screening and those who did not. There was no significant difference in participation in prostate cancer screening based on previous screening experience; and there were no significant differences in prostate cancer screening for men who had screening done in the past 12 months and those who did not. While this was a large study involving participant education on a chronic medical condition, the gaps identified were similar to those previously noted. These include the absence of faith messages in the intervention and illness representation as a study variable. Additionally, the study criteria focused solely on male participants.

In a translational pilot study to increase awareness about the importance of participating in cancer research, Colon-Otero et al. (2012) described the partnership between the Mayo Clinic and African American churches in Jacksonville, Florida. This study addressed the under-representation of African American men or women in these types of studies. The educational program focused on cancer research and healthy behaviors and involved 318 participants, of which 218 (79%) returned the questionnaire

evaluation. There were 12 educational sessions targeting multiple myeloma and five cancer-reducing behaviors (nutrition, physical activity, tobacco cessation, breast feeding, and limited alcohol consumption). Results showed that 67% had not previously received any multiple myeloma cancer information, 57% never knew about clinical cancer research, 60% were willing to participate in cancer research, and 61% were interested in research that was relevant to African Americans. While this was a large pilot study that focused on participant education in African Americans, the gap included no faith messages in the education and no evaluation of illness representation.

The classic work, randomized WATCH (Wellness for African Americans through Churches) project compared the promoting of colorectal cancer prevention activities in African American members of 12 North Carolina African American churches (Kramish Campbell et al., 2004). With a total of 587 participants randomized to two groups, the researchers compared the Tailored Print Video (TPV; Kramish Campbell et al., 2004) and the Lay Health Advisor (LHA; Giblin, 1991; Israel, 1985) methods. In the TPV approach, information gathered from participants in their assessments were inputted into a computer software to generate customized colorectal cancer prevention messages that were relevant, culturally aligned, and credible to the individual. This resulted in four personalized computer generated newsletters and four videotapes targeting their educational styles, which were mailed to their homes. The LHA were people in the community who served as sources of support and advice and were identified by the researchers as the ones to deliver the colorectal cancer education to the study participants. The results showed significant improvement in all the TPV areas: consuming fruits and vegetables and physical activity ($p < .005$), and fecal occult blood testing (FOBT)

increased 15% in those 50 years and older. There was no demonstrated effectiveness in the LHA intervention, which was not an expected outcome of the study. Even though this was a large study conducted among African Americans, the gaps in this research were that despite the material being tailored to the church population, there was no incorporation of the relevant faith messages in the education. Also, illness representation was not a study variable.

Project BRIDGE was a three year community based participatory research (CBPR) collaboration between the University of Texas and a large African American church in Houston Texas aimed at reducing substance abuse and HIV/AIDS in African American adolescents (Marcus et al., 2004). There were 34 adolescents ages 13-14 years in the BRIDGE group and 27 adolescents of the same age in the comparison group. There was no significant differences in gender between the BRIDGE and control group. Greater than 55.9% of the BRIDGE adolescents lived in a two-parent household, while about 33.3% of the comparison group adolescents lived with both parents. The results showed that the comparison participants reported significantly more marijuana use ($Chi^2 = 5.09$; $p = 0.024$) and other drug use ($Chi^2 = 6.48$; $p = .011$) than the BRIDGE group. There was also increased fear of HIV/AIDS in the BRIDGE group (100%) than the comparison group (90%). This study showed the feasibility of partnering with the African American church for HIV/AIDS education and has been expanded to other metropolitan churches. While this was a long-term study that addressed education about a signficant chronic health condition in African Americans, the study's gaps are that the content did not include faith messages and older participants were not studied.

In a pilot HIV/AIDS education and risky behavior reduction study in female teenagers ages 13-17 years, Archibald and Newman (2015) engaged 60 Afro-Caribbean mother/daughter groups from two African American churches in Southeast Florida in their CBPR research. Participants were randomly assigned to the test group (N = 30) Making Proud Choices Caribbean Style (MPCCS) and the control group (N = 30) of general health education. Each group was exposed to four-hour education sessions of either MPCCS or standard education over three weeks, were tested pre/post intervention, and at three months posttest. The study was guided by the Theory of Planned Behavior (Fishbein & Ajzen, 2010). Participants' knowledge was tested with the HIV/AIDS Knowledge Questionnaire (Carey, Morrison-Breedy, & Johnson, 1997), attitude with the AIDS Attitude Scale (Shrum, Turner, & Bruce, 1989), improved communication about sex with the Family Adolescent Risk Behavior and Communication Scale (FARBCS: Miller, Forehand, & Kotchick, 1998), and risky sexual behavior with the Adolescent Risk Taking Instrument (ARTI: Busen & Kouzekanani, 2000). Independent *t* tests were run to analyze the data. For the daughters, the results showed statistically significant improvements in HIV/AIDS knowledge ($p < 0.01$; $p < .05$), and communication skills about sex ($p < .05$; $p < .05$), in the MPCCS group posttest and three months posttest compared to the control group. There was also statistically significant decrease in risky sexual behavior ($p < .05$) in the MPCCS group immediate posttest, but not at three months ($p > .05$). There was no change in attitudes about AIDS from pre to posttest at either stage in the MPCCS group. For the mothers, the results showed statistically significant improvements in knowledge about HIV/AIDS ($p < 0.01$; $p < .01$), posttest and at three months. There was improvements in attitudes about AIDS ($p < 0.01$) immediately

posttest but not at three months ($p > .05$), and there was no improvement in communication skills about sex at either posttest or three months ($p > .05$; $p > .05$). The strengths in this study is that it was culturally tailored to the target population and was conducted in the church on a chronic disease that affects the population. The gaps are that no salient faith-messages were included in the intervention, the study involved only Afro-Caribbean female participants, and was conducted in the adolescent population.

Faith-Based Studies

The Faith-Based Approaches in the Treatment of Hypertension (FAITH) in Blacks was an intervention that evaluated the effectiveness of faith-based education versus faith-placed education on blood pressure outcomes in African Americans (Schoenthaler, et al., 2018). The researchers compared the faith-based Therapeutic Lifestyle Change (TLC; Appel, et al., 2003; Dickinson, et al., 2006) and Motivtional Interviewing (MINT; Ammerman, et al., 2003) with standard high blood pressure education in a cluster randomized control trial of 373 participants from 32 African American churches in New York. The TLC-MINT was delivered in weekly, 90-minute group sessions that consisted of education on healthy lifestyle, prayer, discussion of health related scripture, and was delivered by church members who were trained by the researchers to deliver the health information. The TLC-MINT arm of the intervention was conducted over an 11-week period. The control group of health education (HE) was also conducted over 11 weeks and was delivered by high blood pressure experts recruited from the local health department and academic institutions. There was one session on lifestyle and medications related to high blood pressure, and 10 educational sessions about topics related to high blood pressure including fire safety, substance abuse and

alzheimers disease. These participants also utilized the booklet "Your guide to lowering blood pressure" (U.S. Department of Health and Human Services, 2007) which was created by the National Institute of Health (NIH). Blood pressure in both groups was evaluated at baseline, and post intervention at three months, six months and nine months intervals. Data analysis were accomplished with linear and logistic mixed-effects regression models. The outcomes demonstrated statistically significant decreases in blood pressure at six months (p = .029) and nine months (p = .068). The strength in this study is that it is a recent randomized study that evaluated the faith-based versus faith placed method on high blood pressure outcomes which provides supportive data for the increased benefits with the faith-based approach. The gaps in the study are that illness repesentation was not a study variable, and Bible scripture was not used as a direct teaching tool for the health education.

The HeartSmarts program (Tettey, Duran, Andersen, & Boutin-Foster, 2017) was a faith-based health educational research to target cardiovascular diseases (CVD). The researchers developed a manual using Bible scriptures to assist with delivering the health information (Tettey, et al, 2016). Lay health educators were recruited from each church to learn the content of the manual and information about CVD, and to subsequently train study participants on the content. One hundred and ninety nine subjects from 14 New York City African American churches completed the 12 week intervention. Biometric data of blood pressure, BMI and waist measurements were taken before and after the 12 week education. Additionally, participant knowledge of CVD was evaluated using 20 open-ended questions. There were significant improvements in posttest outcomes in all variables tested except for waist circumference (SBP: $p < .001$, DBP: $p < .001$, BMI: p =

.001, waist: $p = .25$), and increase in correct CVD health assessment scores $p < .001$. The study findings support a culturally-derived model for CVD health education and risk reduction in African Americans. The strength of this study is that it incorporated Bible scriptures in the health education to target CVD. The gaps are that the instrument used to evaluate education included open-ended questions, and illness representation was not a study variable.

In the Fostering African American Improvement in Total Health! (FAITH!) cardiovascular diseases (CVD) education program, researchers joined with three Rochester, Minnesota African American churches to implement a 16-week, culturally tailored lifestyle change program (Brewer et al., 2017). This was an extension of earlier work done in Baltimore, Maryland using the FAITH! approach (Buta et al., 2011). The researchers described the program development and implementation using the PRECEDE/PROCEED model (Buta et al, 2011), which is a theoretically grounded roadmap for effective behavior change. The PRECEDE/PROCEED model addressed the factors that increase the likelihood of behavior change, permit behavior change, and reinforce behavior change. There were nine steps to the model: five for the assessment components, one for execution, and three for evaluation. The program included healthy eating lectures, educational materials, cooking demonstrations, food sampling, and a church-run food pantry. All the steps focused on reducing diseases that are related to eating choices. The 16-week intervention was presented in eight, bi-weekly 90 minute educational sessions, which included prayer and cooking demonstrations. Evaluations were conducted at baseline, immediately post intervention, and three months later. Of the total 37 participants recruited for the study, 36 completed the evaluations. The outcomes

demonstrated feasibility of using the FAITH! approach to CVD education in African Americans. There was also statistically significant increase in education post intervention ($p < .02$), and improvement in biometric/biosocial markers that were sustained over three months. Brewer et al. (2017) identified some strengths in this study in that the participants were U.S.- born African Americans versus Black immigrants, as well as the community-based participatory research (CBPR) method to the intervention. While FAITH! was a good faith-based study that addressed CVD risk factors in African American, the gaps were that participant knowledge of the study variable was not evaluated pre-intervention, and illness representation was not addressed.

The Take it to the Pews (TIPS) study was a CBPR nine-month HIV awareness and screening project conducted in 11 Kansas City African American churches (Berkley-Patton et al., 2010). There were TIPS Tool Kit activities presented twice monthly, which utilized the church leaders in all phases of the research process. The tool kit discussed HIV prevention, transmission, screening, stigma, and compassion for those affected. The kit also presented religiously tailored information that was delivered during the Sunday and Wednesday services. The study assessed the feasibility of developing, implementing, and evaluating HIV interventions in African American churches. The participating church members reported high exposure to TIPS materials (91% received HIV education materials, 84% heard a sermon about HIV prevention, 87% thought the church should discuss HIV, and 77% believed the church should offer HIV screening). The TIPS study demonstrated feasibility of HIV prevention studies being conducted in the African American church, especially with the CBPR approach. While TIPS focused on participant education using salient religious content related to a chronic health condition,

a gap in the study was there was no pretesting to compare the post intervention results to, in order to evaluate the effects of the religiously tailored material on HIV awareness.

Marshall (2015) conducted a faith-based intervention on 117 African American women from three African American churches in South Florida to evaluate the impact of a spiritually guided treatment on attitudes about breast self-care. There were three groups of women (control $N = 40$, comparison $N = 38$, treatment $N = 39$) who were over the age of 30 years. Participants met on one day and had data collection in four phases. In Phase 1, the control Group 1 completed the survey instruments. In Phase 2, the comparison Group 2 watched a Susan G. Koman breast cancer awareness video prior to completing the survey instruments. In Phase 3, the treatment Group 3 participated in a powerpoint presentation that had breast health information coupled with Bible scripture prior to completing the survey instruments. Phase 4 was a qualitative component that included all groups. There were four different survey instruments used, but the Cancer Attitude Inventory (CAI; Berrenberg, 1991) captured the information relevant to this new study. It was hypothesized that the treatment Group 3 would have significant post-intervention improvements on the CAI. Repeated measures analysis of variance revealed pretest mean scores 171.54 ($SD = 35.95$) were higher than posttest mean scores 159.56 ($SD = 41.59$), which was the desired outcome of an inverse relationship. The strength in this Marshall (2015) study was that it was a focused faith-based intervention on a chronic disease in African American participants. The gap is that the study was focused on breast health, which is not typically a topic for men. Additionally, illness representation was not a study variable.

In a breast cancer awareness study, Holt et al. (2008) evaluated the effects of spiritually-based education versus secular-based education on early detection of breast cancer by doing a cognitive response analysis. One hundred and eight African American women (N = 108), ages 40 years and older from six Alabama African American churches were randomly assigned to two groups. The women in the spiritually-based group were older than the secular-based group. A breast cancer awareness booklet was given to the participants and after reading it they were to list their thoughts and code them as positive, negative, or neutral. Mixed methods analyses were done. The results demonstrated significant differences in the spiritual-based education group for thoughts involving personal connections, x^2 (1) = 20.39, $p < .001$; self-assessment, x^2 (1) = 17.22, $p < .001$; and spiritually based thoughts, x^2 (1) = 9.51, $p < .01$. The women in the spiritual education group made more personal connections with the content in relation to their awareness. The strength in this study is that it intertwined the Biblical messages into the health education about breast cancer. The gap is that since the focus was breast cancer, the study sample was only women. Also, illness representation was not studied.

Using translational research, Boltri, Davis-Smith, Seale, Shellenberger, and Okosun (2008) implemented the lifestyles portion of the National Institutes of Health Diabetes Prevention Program (Diabetes Prevention Program (DPP) Research Group, 2002) in a southeastern African American church. The DPP is a national program and involved 3,234 subjects who were randomized into groups of control, intensive lifestyle modification, and Metformin use. Result of the DPP showed 58% prevention of diabetes in the lifestyle modification group and 31% in the Metformin group. Boltri et al. (2008) adjusted the lifestyles modification of the DPP and made it faith-based by changing the

16 session program into group meetings that involved prayer prior to each meeting. The prayer was led by a deacon in the church. There were 50 people who filled out the screening questionnaire, of which 26 were found to be at risk. Of that group, 16 did fasting glucose (FG). Eight were found to be prediabetic and were included in the study (N = 8). The program lasted four months and included volunteers with medical knowledge who helped to deliver the DPP message. The pre and post-program participation outcome variables demonstrated significant reduction in all areas ($p < .005$): weight (3.6%), BMI (3.8%), systolic B/P (11.7%), diastolic B/P (14%), and FG (3.8%). Even though this intervention was an extension of the national DPP program, the gaps in the research were that participant knowledge of the disease was not evaluated, the small sample size of eight participants, and Bible scriptures were not used in the method to educate participants about diabetes.

In the Heart and Soul Physical Activity Program (HSPAP), Peterson and Cheng (2011) did a pilot study on 20 middle-aged African American women (ages 41-63 year, mean age 49.61 years) in a Midwestern church to promote physical activity. It was a six week pre and posttest research using one set of participants who received a HSPAP booklet revised for African American women. The booklet was used to set goals, recruit social support, and document the successes or challenges to physical activity. The intervention included six weekly, two-hour sessions that provided information on the four domains of social support to promote physical activity (appraisal, belonging, tangibility, and self-esteem). Additionally, there was 30 minutes of physical activity that incorporated spiritual activities and gospel music. There was significant increase in the amount of physical activity t (17) = 2.29, $p < .05$, from 412 min per week pretest to 552

min per week posttest. The increase in intensity of exercise posttest was not statistically significant. There was significant positive correlation between social support and the intensity of exercise ($r = .58$, $p < .05$). The strength in the HSPAP was the incorporation of spiritual activities and gospel music into the intervention. The gap is that participant knowledge of the content was not evaluated.

The WORD (Wholeness, Oneness, Righteousness, Deliverance; Kim, et al., 2008) was a weight management CBPR study conducted with 73 participants (treatment group $N = 36$ and control group $N = 37$) from four African American churches in North Carolina. Lay persons were recruited from each church and trained to become facilitators of the study. The study incorporated the Transtheoretical Model stages of change (Prochaska, Redding, & Evers, 2003) into education about diet, exercise, and healthy food shopping. There were 15 minutes of Bible study on health, and five minutes of prayer with each session. The first group (test group) engaged in study activities for eight weeks. Weight was evaluated before and after the intervention. The control group had the intervention one month after the test group completed the study. Instead of group sessions, the control group received a health magazine specifically designed for the WORD program, monthly for three months. The health magazine included information on diet, exercise, healthy shopping and Bible study content. Weight was evaluated before and after the intervention. The results showed that the treatment group lost three pounds more ($p = .001$) than the control group. The researchers discussed that the seemingly small weight loss of three pounds may be due to the length of the study, whereas greater weight loss may be observed with studies lasting 24 weeks or longer. The strength in this

study is that the education directly incorporated Bible study and education on health into the intervention. The gap is that participant knowledge of the content was not evaluated.

In the Healthy Body Healthy Spirit Trial, Resnicow et al. (2005) engaged 960 participants from 16 African American churches in Atlanta, Georgia in a one year study to increase consumption of fruits and vegetables and to increase physical activity. This program had three study groups: Group 1 – standard educational materials; Group 2 – culturally relevant self-help nutrition and physical education information that was paired with Bible messages/gospel music; and Group 3 – same intervention as group two, plus four telephone counselling sessions using motivational interviewing. Data were collected using the National Cancer Institute Fruit & Vegetable Food Frequency Questionnaire (FFQ; Thompson et al., 2000), the Health Habits and History Questionnaire (HHHQ; Resnicow et al., 2005), and the Community Healthy Activities Model Program for Seniors (CHAMPS; Harada, Chiu, King, & Stewart, 2001; Stewart, et al., 2001). Mixed model repeated measures ANOVA were used for data analysis. There were significant increases in consumption of fruits and vegetables and physical activity at one year follow up in groups two and three, with no significant between groups difference for physical activity. There was improvement with fruit and vegetable consumption with motivational interviewing but not in physical activity. While this impressive faith-based study involved participants from various churches, the gaps were that specific chronic diseases relevant to the African American population were not evaluated, and knowledge of study variables was not measured.

The Project Joy was a faith-based intervention that targeted cardiovascular disease (CVD) risk factors of diet and exercise in 529 African American women from 16

churches in Baltimore, Maryland (Yanek, Becker, Moy, Gittelsohn, & Koffman, 2001). This classic work was a one-year intervention with women ages 40 years and older. This intervention was distinct for culturally tailoring the content to the population and for evaluating the impact of the spiritual component of the church on the outcomes. There were three groups. One was a standard intervention (SI) that had a behavioral model and weekly sessions and another a spiritual group (SP) that had a behavioral model that was enhanced with the church culture and spiritual components. These included group prayer at each weekly session, health messages that incorporated scriptures, and physical activity done to gospel music. The third group, the control group (SH), had self-help and non-spiritual content. After one year follow up, there was significant improvement in all the risk factors in the SI and SP groups (weight = - 1.1 lbs, waist circumference - 0.66 inches, systolic blood pressure = - 1.6 mm/Hg; dietary energy = - 117 kcal; dietary total fat = - 8g; sodium intake = - 145mg), but not in the SH (control) group. There was marginal change in physical activity in the SI and SP groups (energy expenditure = 38 kcal). There was not a significant between groups difference in the SI or SP groups findings. While Project Joy did incorporate faith messages in the interventions, the gaps in the study were the absence of male participants, omitting other components of CVD risk factor modification, and participant knowledge of study variables was not studied.

The Learning and Developing Individual Exercise Skills (L.A.D.I.E.S.) for a Better Life physical activity intervention for African American women was conducted from 2010 - 2011 and evaluated the effects of faith-based versus faith-placed interventions on increasing physical activity (Whitt-Glover, Goldmon, Karanja, Heil, & Gizlice, 2012). It was a cluster randomized study, involving 30 churches, with total 417

participants who were placed in three groups: (a) faith-based intervention – 90-minute group sessions that started out with prayer and had 30 minutes physical activity, followed by group discussion and skill training that was done using faith-based curriculum; (b) faith-placed intervention – 90-minute group sessions that started out with a secular quote and had 30 minutes physical activity, followed by group discussion and skill-training based secular curriculum; and (c) information only control group – standard information on physical activity. All the intervention groups met 25 times over 10 months. The primary outcome that was measured was physical activity demonstrated by the amount of steps per day and moderate to intense daily exercise. Data were collected at baseline, 10 months, and 22 months. Whitt-Glover, Goldmon, Gizlice, Heil, and Karanja (2017) later reported the results of L.A.D.I.E.S demonstrated improvements in outcomes with average 3,990 ± 1,828 daily steps (pedometer), 23.9 ± 37.7 minutes per day moderate-to-vigorous physical activity (accelerometer), and 25.4 ± 45.4 minutes of moderate-to-vigorous-intensity walking per week (self-reported). Whitt-Glover et al. (2012) identified the need for more studies that focus on the faith-based impact on health outcomes. While this was a study that did directly evaluate the faith-based versus faith-based content on outcomes, the identified gaps were that participant knowledge was not evaluated and illness representation was not a study variable.

Discussion of Gaps in Knowledge Base and Link to Caring Science

This chapter was a comprehensive review of the available literature on the phenomenon of interest in this current research. The review covered illness representation studies, as well as faith-placed and faith-based studies done in African American churches on various health topics that are relevant to the population, and are on the CDC

(2018) list of priority targets for risk reduction. Overall the illness representation studies demonstrated that positive health outcomes from chronic diseases were associated with improved illness representation related to those conditions however, there were many gaps in the literature related to these studies. The first gap is that there was only one study traced that evaluated illness representation of high blood pressure in the African American church-going population. Additionally, this study only involved women participants in the intervention. The second gap is that of the six relevant illness representation studies reviewed, five (83%) focused on heterogenous populations, with African Americans being the minority in numbers participating in those studies. The third gap is that none of the illness representation studies included participant education in the intervention. The fourth gap is that only one study (17%) evaluated participants' knowledge of the study variables as a part of the intervention.

In addition to the gaps in the illness representation studies, there were also gaps in the faith-placed and faith-based studies. A gap that was found to be overlapping in both faith-placed and faith-based studies was the limited amount of recent studies available on the topic of interest. As a result, both classic works and more recent studies were included in the review. There were 15 relevant faith-placed studies included in the literature review. The over-arching similarities in the outcomes of those studies were that there was overall improvement in outcomes in some of the faith-placed interventions, however some studies did not attain statistically signficant improvements post-intervention. Specifically, of the nine studies that involved participant education, two (22%) did not show any improvements in knowledge after the intervention. For the studies that did evaluate feasibility of the faith-placed approach to health outreach, all

demonstrated feasibility. Another gap in the faith-placed studies is that participant knowledge of the study variables was not evaluated in some of the studies. The final gap in the faith-placed studies is that there was no integration of faith messages or faith-language into the interventions, despite them being conducted in church settings.

The faith-based studies presented many strengths and some gaps in the methodology which are also noteworthy. All of the faith-based studies demonstrated positive improvements post-intervention and supported the studies' hypotheses. However there were variations in the level of the faith-based component, in that the majority of the studies included prayer, gospel music, and spiritual rituals as the faith-based method. Only a few studies actually intertwined the faith language into the intervention to be used for participant education. Not all of the studies evaluated patient knowledge of the study variables, nor included participant education as a part of the intervention. Some of the studies were completed in very small sample groups, as well as a few focused only on female participants.

The nursing Theory of Culture Care Diversity and Universality (TCCDU; Leininger, 1991, 1995; Leininger & McFarland, 2010) that is used to underpin this current research stresses the importance of nurses incorporating patient culture and social structures into patient-care delivery. The literature demonstrates that African Americans are a group of very religious people who seemingly have more positive outcomes when salient spiritual ideals are interwoven into the health interventions. Adopting such vital methods are in-line with the first tenet of the TCCDU that stresses cognizance of cultural norms like religion when dealing with patients of varied cultures; and the second tenet of incorporating social structures like the church into patient care. It is with these principles

that a faith-based method to educate about high blood pressure in the church-going African American population was chosen, and the TCCDU used as one of the theoretical groundings of this study.

Summary

While the literature review was comprehensive and presented valuable data on what is known about the topic of interest, the gaps that were identified will be addressed in this current research. These gaps include: (a) Illness representation of high blood pressure will be evaluated in the African American church-going group. (b) Both male and female participants will be studied. (c) Bible scriptures will be used as a direct teaching method for the health education making it truly faith-based. (d) Participants' knowledge will be assessed before and after the intervention. (e) A target sample of 100-150 participants will be recruited for the study.

CHAPTER 3. METHODOLOGY

Introduction

This chapter outlines the methods that were used in conducting the research. The information in this chapter is presented in the following order: (a) Introduction, (b) research design, (c) research questions, (d) measures (e) ethical considerations, (f) sample, recruitment, and setting (g) data collection protocol, (h) data analysis, (i) strengths and limitations of the research plan, (j) timeline and, (h) summary.

Research Design

This was an inferential, one-tailed, quasi-experimental, quantitative study using simple descriptive analysis and paired samples *t* tests, consistent with recommendations from Tappen (2011). Simple descriptive analyses are the most basic descriptive analyses that are usually used to describe sample characteristics like demographics. Paired samples *t* tests are appropriate methods to use when the same group of participants are being compared under two different sets of conditions like pre and posttesting. This method produces results that are correlated or paired. The subjects in this study were given questionnaires pre-intervention, then they read the daily faith-based health devotional for five days, after which they completed the same set of posttest questionnaires.

The literature review demonstrated that both health behavior and participant personal awareness of an illness increased after as little as a single intervention and is

sustained for up to a year (Resnicow, et al., 2005). Thus the five day approach for this intervention was hypothesized to produce identifiable improvements.

Consistent with African Americans spiritual practices of performing daily spiritual meditations, the faith-based health devotional was a means of framing health information in the context of faith, which would be incorporated into the daily readings during the devotions. The devotional was intended to positively affect the illness representation of high blood pressure as well as high blood pressure knowledge. It was developed using the five constructs of the illness representation model (IRM), allowing each day's reading to focus on one construct (that was another reason for the five day duration of the intervention). Each day's devotion was presented in the format of an everyday relatable scenario that depicted an unforseen health or life challenge. The similarites between the scenario and high blood pressure were then higlighted with a summary given of how the Bible depicts God's plan for healthy status, in this case high blood pressure, wellness being included. A checklist of three healthy activities related to high blood pressure were also added at the end of each day's devotion.

The premise for developing a devotional booklet as the intervention was based on the findings from multiple researchers that older adults (35 years and older) are more likely than their younger counterparts to use printed materials to seek out health information (Duggan & Brenner, 2013; Kumar & Lim, 2008; Ybarra & Suman, 2008). Fashioning the health booklet after the "Daily Bread" (Ceta, Knapp, Gustafson, Hudberg, & Markham, 2014), had some implications, as African Americans are known to have devotions as a part of their daily spiritual meditative rituals (Nguyen, Taylor, & Chatters, 2016; Mellowes, 2010), and oftentimes incorporate booklets into these practices

(Patterson, 2014). These meditations or devotions may be done in the form of reading a book including the Bible, a devotional booklet, dedicated time in prayer, internet-based scriptures, text messages, group telephone calls, or a combination of any of these (Duggan & Brenner, 2013; McClendon, 2012; Williamson & Kautz, 2009). Additionally, the "Daily Bread" is a staple in the local Christian community transcending racial and ethnic lines. Creating the daily health devotional similar to the "Daily Bread" engendered familiarity and comfort that is often associated with such booklets. The daily health devotional booklet was portable, easy to read, adaptable to the wide age-range in the study population, and was not dependent on the availability of technology like cellular phones and internet. Also since this study expanded on the prior faith-placed interventions and combined the health instruction directly into faith-based messages, the printed devotional served as a pilot for this type of intervention.

The directional one-tailed approach was based on the assumption that the intervention would improve the outcomes. A quasi-experimental pre and posttesting method versus comparison group randomization was used since this study specifically evaluated illness representation and was not actually testing the health devotional as an instrument. The baseline high blood pressure illness representation and high blood pressure knowledge were compared to the post-intervention illness representation and high blood pressure knowledge, and were hypothesized to have improved outcomes.

Prior to initiating the recruitement, the researcher anticipated a barrier to recruitment and potential hesitancy of church leaders to allow the conduct of research within the churches. This supposition was based on the literature that demonstrated there has been past betrayal of trust between places of worship and community research

partners, which affects the willingness of churches to engage in research (Corbie-Smith et al., 2010). However, in the actual recruitment process, this researcher was met with enthusiasm from the church leaders to have their congregations participate which triggered the church membership's energy.

Research Questions

In order to achieve the study aims, the following research questions were posed:

1. What is the effect of a faith-based health devotional on knowledge of high blood pressure and how to prevent it in African Americans?
2. What is the effect of a faith-based health devotional on select constructs of the Illness Representation Model in African Americans with high blood pressure?

Hypotheses

Based on these research questions, the following hypotheses were tested.

H_1. After using a faith-based health devotional, participants will score higher in general knowledge of high blood pressure and how to prevent it on the High Blood Pressure Prevention IQ Quiz (HBPP-IQ).

H_2. After using a faith-based health devotional, participants will demonstrate a statistically significant increase in the timeline scores on the Revised Illness Perception Questionnaire (IPQ-R).

H_3. After using a faith-based health devotional, participants will demonstrate a statistically significant increase in the consequences scores on the IPQ-R.

H_4. After using a faith-based health devotional, participants will demonstrate a statistically significant increase in perceived personal control scores on the IPQ-R.

H_5. After using a faith-based health devotional, participants will demonstrate a statistically significant increase in perceived treatment control scores on the IPQ-R.

Measures

Two instruments were used in conducting this study, the Revised Illness Perception Questionnaire (Moss-Morris et al., 2002), and the High Blood Pressure Prevention IQ Quiz (National Heart Lung, and Blood Institute [NHLBI], 1994). Additionally, a demographic sheet that captured the participants' characteristics including sociodemographics and African Ancestry identity was developed by the researcher. The demographic sheet is discussed in more detail in Chapter 4.

The Revised Illness Perception Questionnaire (IPQ-R)

The Revised Illness Perception Questionnaire (IPQ-R: Moss-Morris et al., 2002) is a revised version of the original Illness Perception Questionnaire (IPQ), which was developed by Weinman et al. (1996). The IPQ and IPQ-R are quantitative instruments which evaluate the five constructs of Leventhal et al. (1992) and Leventhal et al. (1980) Illness Representation Model (IRM): identity, causal mechanism, timeline, consequences, and controllability/curability. The developers recommend that when using the IPQ-R, the researcher should substitute the word "illness" in the IPQ-R with the name of the specific chronic condition being evaluated. So, in the current study, illness was substituted with "high blood pressure." In the IPQ-R, there are three sections where identity and causal mechanism are measured in sections one and three, respectively; timeline, consequences, and controllability are cummulatively evaluated in section two. The identity and causal mechanism sections were not used in this current study for the following reasons: The

identity portion presents pre-determined symptoms that are associated with chronic conditions and asks the subjects to rate whether or not they are associated with high blood pressure. Specific symptoms related to high blood pressure were not the focus in this study, and gathering that information from participants would not have beneficially informed the outcomes. Additionally, the causal mechanism section presents pre-determined causes associated with chronic conditions, and the results are to be determined through factor analysis to group common causes. Those data also would not beneficially inform this study, as identifying perceived causation or symptoms were not the focus of the education.

Section two of the IPQ-R evaluates timeline, consequences, and controllability/curability with 38 Likert-scale questions using responses of "strongly disagree," "disagree," "neither agree nor disagree," "agree," and "strongly agree." This section additionally differentiates between acute, chronic, and cyclical timelines, as well as personal or treatment controllability. It also assesses the subject's illness coherence, which is a form of meta-cognition that reveals how the person interprets the usefulness of the illness representation. Lastly, this section addresses emotional representations of the illness (high blood pressure), which are the precursors to emotion-based coping/treatment strategies. Illness coherence and emotional representations were not reported in the final data analysis as the hypotheses focused on the timeline, consequences and controllability constructs.

Validity of the IPQ-R was already determined by the developers of the original IPQ instrument (Weinman, et al., 1996) who tested 711 participants with eight different categories of chronic illnesses: rheumatoid arthritis (RA), type II diabetes, asthma,

chronic pain, acute pain, multiple sclerosis (MS), myocardial infarction (MI), and HIV. The Positive and Negative Affect Schedules (PANAS) determined discriminant validity; the positive affect (PA) measured the person's enthusiasm, feelings of being alert and active, while the negative affect (NA) evaluated subjective discomfort and distress (Watson, Clark, & Tellegen, 1988). Predictive validity was assessed using the Sickness Impact Scale (Bergner, Bobbitt, Carter, & Gilson, 1981), a self-report of sickness disability; the Ambulatory Index (Hauser et al., 1983), an observer-rated test that measures patient mobility; and the Fatigue Severity Scale (Chalder et al., 1993), which measures physical and mental fatigue. Cronbach's alpha for each of the subscales on the IPQ were: identity = .75, timeline acute/chronic = .89, timeline cyclical = .79, causal mechanisms = .86, psychological attributions =.67, consequences = .84, personal controllability = .80, treatment controllability = .80, illness coherence = .87, and emotional representations = .88 (Moss-Morris et al., 2002).

Scoring of the IPQ-R. When scoring the IPQ-R, higher acute/chronic timeline scores indicate stronger beliefs about the chronicity of high blood pressure. Higher cyclical timeline scores indicate greater beliefs about the cyclical or recurrent nature of high blood pressure. Higher consequences scores indicate greater beliefs about negative consequences from high blood pressure. Higher scores on personal or treatment controls indicate positive beliefs about the controllability of high blood pressure. Appendix M contains the general scoring guide; Appendix N contains the study-specific scoring guide. No special permissions were needed to use the IPQ-R. The instrument is made available by the developers through their website (https://www.uib.no/ipq/).

The High Blood Pressure Prevention IQ Quiz (HBPP-IQ)

The High Blood Pressure Prevention IQ Quiz (HBPP-IQ) is a 12-item questionnaire developed by the NHLBI (National Heart Lung and Blood Institute, 1994) that evaluates a person's knowledge about high blood pressure and how to prevent it. The HBPP-IQ is available for public use and has true/false questions with scoring from 0 to 12 (true = 1 and false = 0). The percentage of correct answers (0 to 100%) is calculated, with higher scores indicating greater knowledge about high blood pressure and its prevention. This instrument has face validity. Greer (2011) tested the internal consistency of the HBPP-IQ with a two-week, test-retest exempt study involving 31 African American women who had high blood pressure. The HBPP-IQ was found to have a correlational coefficient .77 with standardized alpha .77 (KR - 20). The same researcher conducted a six-week pilot study to test the feasibility of using the HBPP-IQ in a randomized control trial (RCT) of culturally tailored educational intervention in 10 African American women with high blood pressure (study group N = 5, control group N = 5). The results showed a slight increase in high blood pressure knowledge post intervention (8 $\pm$ 1.2 to 9.2 $\pm$ .84, Cohen's d = -1.14) vs control (9.8 $\pm$ 1.9 to 9.6 $\pm$ 1.1, Cohen's d = .12) but were not statistically significant (p = .17, p = .55, respectively). The test-retest reliability was .67.

Research Documents

The researcher prepared 150 sets of research packets (pretest packets and posttest packets). Each packet contained the following documents, all of which included only identification numbers (ID#), with the exception of the adult consent form.

Pretest packets:

a) Florida Atlantic University (FAU) Institutional Review Board (IRB) approved consent form that had the identification number (ID #) on it. Only the consent forms had participant names on the document.
b) Pretest demographic sheet.
c) Pretest HBPP-IQ.
d) Pretest IPQ-R.

Posttest packets:

a) A brief instructions cover page that was clipped to the outside of the daily devotional.
b) Five-day health devotional entitled "God's Plan for Your Health."
c) Participant copy of the IRB approved consent form.
d) Posttest HBPP-IQ and posttest IPQ-R. The posttest HBPP-IQ and IPQ-R were placed in a sealed envelope that had typed instructions on the envelope on how to complete the instruments after reading the devotional. Participants were to replace the completed surveys back into the envelope and return the envelope to the researcher the following week. The pretest documents were printed on white paper and the posttest documents were printed on cream-colored paper for easy reference.

Ethical Considerations

After identifying the prospective churches, the researcher made contact with the pastors/church leaders through direct personal meetings and telephone calls. An explanation of the study was given during those encounters. Each church provided an

approval letter to the researcher (Appendix A), giving permission to have the researcher perform the study in the specific church. Those letters were submitted to the IRB of FAU as a part of the approval process to conduct the research. Once IRB approval was granted (Appendix B), the researcher again met with the pastors/church leaders, reviewed the inclusion/exclusion criteria, showed the study instruments and the faith-based health devotional, and explained what each participant was required to do for the study. The researcher also provided each church with an IRB-approved announcement flier (Appendix C) that was posted on the churches' bulletin boards and/or read in the church announcements. This was done two to three weeks prior to the implementation of the study.

Sample, Recruitment, and Setting

Sample

The population of interest were African Americans who were affiliated with organized Judeo-Christian African American churches. A convenience sample of participants were recruited and the sample size of 100-150 participants was calculated using G*Power version 3.19 software, which is a statistical software program that is used to determine a priori sample size (Faul, Erdfelder, Buchner, & Lang, 2009). For a medium effect size of .3, a minimum sample of 100 was calculated in order to obtain a power of .8. To get a power of .99, the sample size would be increased to 150 participants (Cohen, 1988). According to Tappen (2011), the effect size describes the estimated magnitude of the phenomenon being studied. The power, or the probability that the study would demonstrate statistical significance is determined by the effect size (Tappen, 2011). The effect size helps to reduce the possibility of Type 1 errors (stating that a true

difference exists between groups when the difference occurs by chance) and Type 2 errors (a true difference between the two groups exists but is not detected).

During the actual recruitment, 142 study packets were distributed and 101 packets were returned to the researcher. One of the study packets could not be used in the data analysis since the participant did not complete the posttest surveys, so the final sample size for this study was 100 participants (N = 100).

Inclusion Criteria

The inclusion criteria were subjects who self-identified as being African Americans, either male or female, self-identified as being diagnosed with high blood pressure, and between the ages of 35 - 80 years. This age range was chosen since Nwankwo et al. (2013) showed the prevalence of high blood pressure increases with age: going from 7.3% in persons ages 18 - 39 years up to 32.4% in persons ages 40 - 59 years, and as high as 65.0% in persons 60 years and older. Also, participants were members or attendees of an African American church, and were able to speak, read, and write in English.

Exclusion Criteria

Subjects who were unable to independently carry out their own activities of daily living or make decisions for themselves were excluded. This was because the questionnaires solicited personal individual perceptions and responses. Also, anyone who was visiting the church for less than one week did not participate, since the subjects needed to be present locally for the length of the intervention, in order to complete and return the posttest surveys.

Variables

Independent variable. Faith-based health devotional as the means of educating participants about high blood pressure.

Dependent variable. Illness representation of high blood pressure. Knowledge of high blood pressure and its prevention to determine if the faith-based teaching method made a difference.

Recruitment

To generate a list of African American churches in Dade, Broward, and Palm Beach counties of Southeast Florida the following strategies were undertaken. The researcher made personal outreach to the leaders of two churches that were affiliated with her home church and solicited the participation of those churches. Additionally, the researcher requested word-of-mouth referrals from the church leaders to other churches with members who were willing to participate. Three additional African American churches were added to the sample churches as a result of referrals. In the African American community, word-of-mouth communication is common (Archibald & Newman, 2015; Archibald & Rhodd, 2013), and thus was an invaluable means of recruiting other churches for this study. Next, the researcher visited the three additional local African American churches and met with the pastors/leaders to explain the study details. This action was very fruitful as there was enthusiasm from the church leaders to have their congregations participate; pastors/church leaders also suggested other churches to join.

Setting

Five African American churches in Dade, Broward, and Palm Beach counties of Southeast Florida were selected to participate in the intervention. Of the five churches, three met for worship on Saturdays and two met on Sundays.

Data Collection Protocol

For implementation of the study, in the first church the leaders invited the researcher to attend the church service on a specific day. Time was allotted between the Sabbath school (morning activities), and the worship service (afternoon activities) for the researcher to meet with the entire congregation. At that time, the researcher discussed the study and consent form (Appendix G), answered church members' questions, and gave out the consents for completion. Those who signed the consent form were administered the pretest materials (Appendices D, E, and F). The researcher then gave each participant who returned the pretest documents a packet that contained an instruction cover page for using the daily devotional which was clipped to the faith-based health devotional (Appendices H and I), a sealed envelope with the posttest instruments (Appendices J, K and L), and a copy of the consent form for their records. The researcher returned to the church the following week where she was allotted time to collect the completed posttest surveys, upon which she gave each participant a personal gratuity of a $10 Walmart gift card.

For all the other churches, the data collection process was as follows: the researcher attended church services two to three weeks prior to data collection; time was allotted during the main service for the researcher to introduce her study to the congregation; a pre-determined date for data collection was announced to the

congregation by the researcher (this date was determined by the pastor/leadership); and the researcher then attended church services each subsequent week leading up to the data collection. The pastor/leader reminded the congregation during the church announcements each week that data collection would take place on the designated day at their convenience. On the days of data collection, study participants met with the researcher after church services in designated areas. There the consent form was reviewed with the group, questions were answered, consents signed and the pretest surveys completed by the participants, which were then returned to the researcher. Each participant who completed the pretest paperwork was given a study packet with the faith-based health devotional and posttest instruments to take home. The researcher returned to each church the following week after the initial data collection to collect the postest surveys and distribute the $10 Walmart gift cards as gratuity. One of the churches had two different sessions for data collection. Once the first data collection was completed, the pastor reached out to the congregation and offered an opportunity to those who did not get to participate initially. Such members were given the opportunity to return another day for data collection and the researcher returned a week later to collect the posttest documents and distribute the $10 Walmart gift cards.

Data Analysis

Simple descriptive analysis was used to analyze the demographic information. Repeated measures paired samples *t* tests were used to analyze the within-groups differences on the IPQ-R and the HBPP-IQ, pre and posttest.

Strengths and Limitations of the Research Plan

The strength in this study is that the intervention addressed high blood pressure which is a chronic disease that disproportionately affects the African American population. Another strength is that the study population were church-going African American participants, an under-served group. Another strength involves the direct incorporation of the salient faith language into the intervention, which is not widely done in health research.

Some limitations to the research plan is that blood pressure would not be evaluated in this study, so the results could not report the direct effect of the devotional on blood pressure readings. Another limitation is the quasi-experimental design, which does not allow for randomization of the participants. Finally, the age range for participation spanned groups with different developmental needs but would simultaneously allow for the sample size. However, in recruiting for the study, it was noted that there were quite a few members in the African American church who are older than 80 years, and still have their sense of reasoning, and otherwise met the study criteria.

Timeline

The entire process of the question/answer session and completing the pretest instruments with the participants took about one hour, during which time a light snack was provided (bottled water and a healthy granola bar). The process of data collection was completed over nine weeks. The researcher attended church services every Saturday and Sunday during the nine week period in order to complete the data collection and maintain community engagement.

Summary

The methods used in this research were quasi-experimental, pre/posttesting on 100 African American church-going participants from five churches in Southeast Florida. Participants ages ranged from 35 – 80 years, as the literature demonstrated that high blood pressure morbidity and mortality rates increase with age (Nwankwo, Yoon, Burt, & Gu, 2013). A booklet faith-based health devotional was constructed by the researcher and used as the means to educate the participants, since the literature also proposed that older people resort to printed materials for education over other means (Kumar & Lim, 2008; Ybarra & Suman, 2008). A demographic sheet and two instruments were used for data collection, to evaluate participants' illness representation of high blood pressure (IPQ-R), as well as knowledge of high blood pressure and how to prevent it (HBPP-IQ). Data were analyzed with Statistical Package for Social Sciences (IBM, 2017) using simple descriptive statistics for the demographics and paired samples *t* tests for the quantitative data. While the length of the implementation of the study lasted nine weeks, the researcher's presence in the churches was well received, and may be attributable to the prior and sustained engagement with the community that the researcher established.

CHAPTER 4. FINDINGS

After obtaining IRB permission, a target sample size of 150 male and female subjects between the ages of 35 - 80 years were sought from five African American Churches in Dade, Broward, and Palm Beach counties in Southeast Florida. A total of 142 study packets were distributed in the recruitment process, with 101 packets being returned to the researcher by the participants. Of those packets, one participant completed the demographic and pretest High Blood Pressure Prevention IQ test (HBPP-IQ), but did not provide any answers on the posttest HBPP-IQ or on the pre and posttests of the Revised Illness Representation Questionnaire (IPQ-R). As a result, that information was excluded from the data analysis and the final sample size for the study was 100 participants (N = 100).

Prior to data analysis, all the data were entered into the Statistical Package for the Social Sciences (IBM, 2017) software, and were visually inspected for accuracy. Missing data were coded as 9999 for data entry. Univariate descriptive analyses were done on all the data to capture the central tendency, variability, skewness, and kurtosis, to assure accuracy of data entry.

Demographics

The purposive sample of 100 participants who self-identified as being diagnosed with high blood pressure, was comprised of African Americans who were members of Judeo-Christian churches in Southeast Florida. Data were collected to capture the

demograpic characteristics of the sample to demonstrate the ancestry identity, gender, age, marital status, level of education, day of worship, church denomination, belief about high blood pressure, and prior use of a daily devotional. Table 1 presents the summary of the sociodemographic data which will be explained individually in the upcoming sections.

Table 1

Sociodemographic Characteristics (N = 100)

Characteristic	*N* (%)
African Ancestry	
Caribbean	70
African	16
American (U.S.)	14
Gender	
Female	77
Male	23
Age	
70-80	29
60-69	36
50-59	28
40-49	5
35-39	2
Marital Status	
Married	46
Widowed	22
Single	17
Divorced	11
Separated	4
Highest Education Level	
College Grad/Post Grad	25
College Undergrad	14
Vocational/Trade	19
High School	26
Middle School	2
Elementary/Primary	14
Worship Day	
Sunday	54
Saturday	46
Church Denomination	
Pentecostal	42
Baptist	35
Adventist	23

Ancestry Identity

In Southeast Florida, there are varying ethnicities and ancestries within the African American population which enhance the rich diverse culture of the area. To capture the variations in the African heritage, participants were asked to describe their ancestry identity as being either African, American, Caribbean, or Hispanic. A majority of the respondents (70%) identified as being of Caribbean descent, while 16% identified as being African, and 14% as American. None of the participants identifed as being Hispanic. Table 1 illustrates the ancestry distinctions between the group of African Americans.

Gender, Age, Marital Status, and Level of Education

The gender breakdown of the group showed there were 77 females (77%) and 23 males (23%). Regarding the ages of participants in the sample, 93% of the subjects were 50 years or older, and 65% were 60 years and older. The range of ages from oldest to youngest were as follows: 29% were between 70 - 80 years; 36% were between 60 - 69 years; 28% were between 50 - 59 years; 5% were between 40 - 49 years; and 2% were between 35 - 39 years. The distribution of the marital status in this church-going group showed the largest number of respondents (46%) reporting that they were married; 22% were widowed; 17% were single; 11% were divorced; and 4% were separated.

This selection of participants were fairly well-educated in that 84% obtained education at the high school level or higher. Additionally, 43% had either high school or vocational school training and 39% were college educated at either the undergraduate or graduate levels. Only 16% of the group had education less than high school. The levels of education listed from the highest to the lowest in this group were: 25% completed college

for graduate or post-graduate/degrees (masters or doctorate); 14% completed college at the undergraduate level (bachelors or associates degree); 19% completed vocational or trade training; 26% completed high school; two percent completed middle school; and 14% completed elementary or primary school. Figure 2 graphically displays the ranked education levels from lowest to highest.

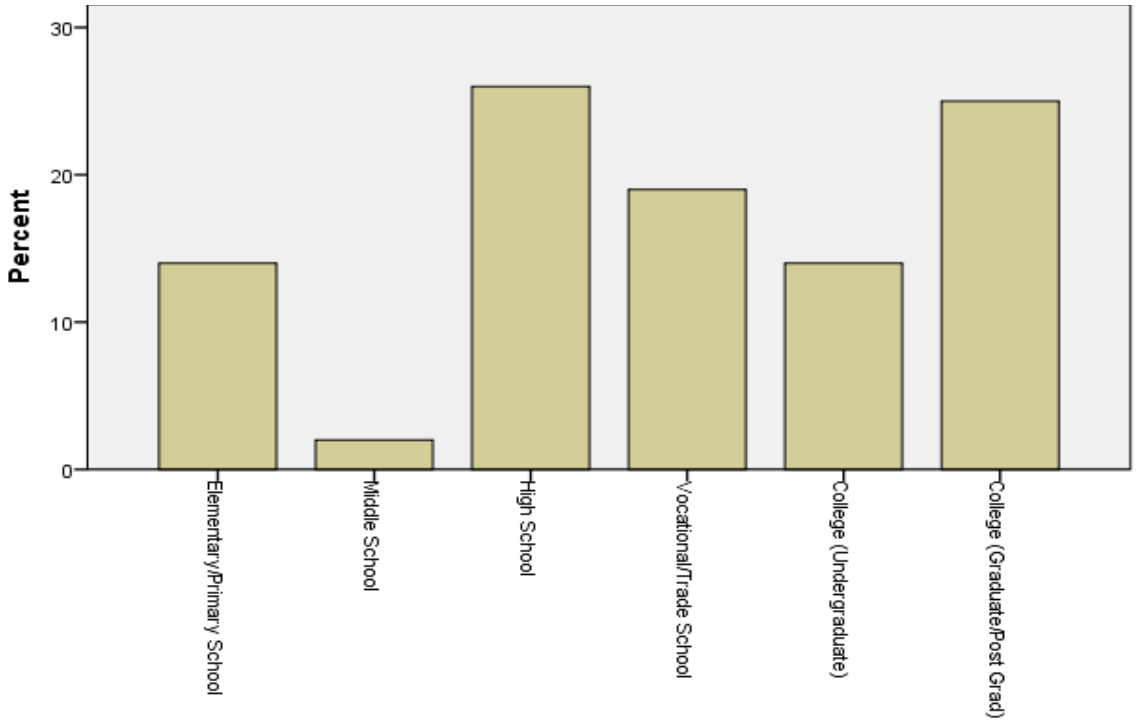


Figure 2. Highest Education Level. Elementary/Primary = 14%, Middle School = 2%, High School = 26%, Vocational/Trade = 19%, College Undergrad = 14%, College Grad/Post Grad = 25%.

Day of Worship and Church Denominations

Since participants were recruited from churches that worship on Sunday and Saturday (Sabbath), the data was further defined based on day of worship and affiliation. The majority of the participants (54%) worshipped on Sunday and 46% on Saturday. All of the participants were of the Protestant affiliation, as 42% were Pentecostal, 35% were Baptist, and 23% were Adventist (Table 1).

Belief About High Blood Pressure Diagnosis

One of the demographic questions queried the participants if they actually believed that they have high blood pressure (despite being diagnosed by a medical professional). Responses were given by 97 of the 100 participants. Table 2 shows that of the 97 subjects who answered, more than three quarters (76 participants) responded "yes" and almost a quarter (21 participants) answered that they did not believe their high blood pressure diagnosis (Table 2).

Table 2

Belief That You Have High Blood Pressure

Belief	Frequency	%	Valid %	Cumulative %
Yes	76	76.0	78.4	78.4
No	21	21.0	21.6	100.0
Missing	3	3.0		
Total	100	100.0	100.0	

Daily Devotional Use and Its Format

Since the intervention in this study involved the creation of a devotional booklet to use as the vehicle for delivering health education, it was important to ascertain whether or not this group of participants previously used this medium and to what extent. As a result, participants were asked if they typically used a daily devotional as a part of their meditative practices and worship to God. If they answered "yes" then they were to indicate which format of devotional they used. Table 3 shows the majority of the participants (82%) reported that they did use a daily devotional. For the 82 respondents who answered "yes", Tables 3 also summarizes the various types of daily devotionals that they used. Of the participants who did use a devotional, 65% used a booklet devotional,

12% used the Bible, 11% used the Internet, 10% used text messaging, and two percent used telephone calls.

Table 3

Daily Devotional Use

Characteristic	*N* (%)
Daily Devotional (*N* = 100)	
Yes	82
No	18
Type of Devotional (*N* = 82)	
Booklet	65
Bible	12
Internet	11
Text message	10
Telephone call	2

Parametric Analysis

Parametric tests of significance as described by Munro (2005) are used when the researcher is making estimations about at least one population parameter based on the sample statistics. The data presented can be ordinal (nominal), interval, or ratio. In this current research, the intention was to find out how well the sample distribution of means before the treatment of the daily faith-based health devotional corresponded with the sample distribution of means after the treatment. The differences in the pre and posttests means (means differences) are nominal data that will be presented. The inference that is being made from this study sample is that the outcomes may be similar to results that would be attained if the study is replicated in the population.

Paired Samples *t* Test

Morgan, Griego, and Gloeckner (2000) suggested that paired samples *t* test statistical analyses are used to evaluate within-subjects significant differences on two comparable measures (illness representation before and after the use of the faith-based health devotional). High blood pressure knowledge was also evaluated before and after the intervention. This is a homogenous group that had repeated measures testing before and after the intervention which warrants the use of paired-samples *t* tests to compare the means differences.

Statistical Significance

In order to assess the variances between the expected outcomes based on the hypotheses and the observed outcomes in the findings, the significance or probability (*p* value) was set at a $p < .05$ level. This probability level suggests that there is less than a five percent (5%) probability that the observed outcomes are due to chance alone (Morgan et al., 2000; Munro, 2005). This significance level is acceptable in nursing research.

Effect Size, Confidence Interval, and Degrees of Freedom

Effect size (ES) helps to differentiate statistical significance from practical significance and also defines the strength of the relationship between the independent variable (faith-based health devotional) and the dependent variables (illness representation and high blood pressure knowledge). Effect size ranges from -1.0, a perfect negative association, to +1.0, a perfect positive association. An ES of 0.0 connotes no correlation (Cohen, 1988; Morgan et al., 2000). With paired samples *t* tests like this study, the ES is expressed as the Pearson correlational coefficient, *r*, and

corresponds with a small effect size (r = .10), medium effect size (r = .30), and large effect size (r = .50) (Cohen, 1988).

Confidence interval (CI) in this research provides an estimation of the likelihood that the sample means differences are representative of the population means differences. This step is an added method used to reject the null hypothesis (Morgan et al., 2000; Munro, 2005), which states that there is no difference between the pre and posttest scores. A 95% CI reports the likelihood that if random samples were taken from the population, a researcher could be confident that 95 out of 100 times the results from those population samples means differences would fall within the upper and lower limits of the CI of this study's sample means differences (Morgan et al., 2000).

The degrees of freedom (*df*) represents the number of scores within the sample that have the freedom to vary. This allows for inference to be made about the population parameter, without underestimation (Munro, 2005). In research, the sum of the variation from the mean of each result has to be equal to zero. Based on this research of 100 participants, the *df* was 99 (N - 1), in that 99 results had the freedom to vary. This was because the variation from the mean of the final number could have been predicted by subtracting the sum of the variation from the mean for the other numbers from the total mean.

Hypotheses Testing

This research aimed to determine if the parameters representing the sample before and after the treatment were the same or whether or not the treatment had any effect. The intervention was in the format of high blood pressure education that was structured in a daily faith-based health devotional booklet. Throughout the subsequent paragraphs, the

terms “daily devotional” and “daily faith-based health devotional” are used interchangeably.

The following hypotheses were tested:

H_0. There was no change after the use of the daily devotional or the distributions of means before and after the use of daily devotional were the same.

H_a. There was change after the use of daily devotional or the distributions of means before and after the use of daily devotional were different.

The High Blood Pressure Prevention IQ Quiz (HBPP-IQ)

Two research questions guided this intervention on the effects of the faith-based health devotional. The first research question addressed participants knowledge of high blood pressure and how to prevent it. The instrument that was used to evaluate knowledge is the HBPP-IQ, which is a 12-item survey that consists of true/false questions, and is scored from 0 to 12 (true = 1 and false = 0). The number of correct answers were calculated, with higher scores indicating greater knowledge about high blood pressure and how to prevent it (National Heart Lung and Blood Institute, 1994). The validity and internal consistency testing for this tool were discussed in Chapter 3. Pretest scores on the HBPP-IQ for each participant were computed manually by the researcher, and the derived score from 0 – 12 was entered into the SPSS software for each participant. This same procedure was repeated for the posttest scores. Paired sample *t* tests were run to compare the computed pretest means scores to the computed posttest means scores, and calculate the differences in the two.

Research Question #1

This question asked: What is the effect of a faith-based health devotional on knowledge of high blood pressure and how to prevent it in African Americans? Research question #1 included the following hypothesis:

H_1. After using a faith-based health devotional, participants will score higher in general knowledge of high blood presssure and how to prevent it on the High Blood Pressure Prevention IQ Quiz (HBPP-IQ).

Results

On the HBPP-IQ, posttest means were $M = 9.09$ and pretest means $M = 8.28$ (Table 4). There was a mean difference of .81, 95% CI (upper = 1.02, lower = .60), $df = 99$, $p < .000$ (Table 5). For the confidence interval, the results indicated that if this study were repeated in the general population, there is a 95% probability that the means difference from that study would fall within the lower and upper limits of the CI found in this study. The results were statistically significant (t [100] = 7.71, $p < .000$), with a large positive ES ($r = .64$) (Table 4). This implies that after using the daily faith-based health devotional, higher scores on the HBPP-IQ were significantly positively correlated with more general knowledge about high blood pressure and how to prevent it. Since the intervention attained the desired result of improvements in knowledge, hypothesis H_1 was supported, and the null hypothesis rejected.

Table 4

HBPP-IQ - Paired Samples Statistics, N = 100. Correlation r = .64

Instrument	Possible Score	*M*	*SD*	SEM
HBPP-IQ (Posttest)	0-12	9.09	1.0	.10
HBPP-IQ (Pretest)	0-12	8.28	1.4	.14

Note: SEM: Standard error of mean. HBPP-IQ: High Blood Pressure Prevention IQ Quiz

Table 5

HBPP-IQ - Post and Pretest Results (Paired Sample Test)

	Paired Differences			95% Confidence Interval of the Difference		Statistic		
Instrument	Mean Difference	*SD*	SEM	Upper	Lower	*t*	*df*	*p*
HBPP-IQ Posttest & HBPP-IQ Pretest	.81	1.1	.11	1.02	.60	7.71	99	< .000

The Revised Illness Perception Questionnaire (IPQ-R)

The sub-section of the IPQ-R that was used in this study contains 38 Likert scale questions that evaluated timeline, consequences, and controllability/curability. The choices on the instrument further break down timeline into acute/chronic and cyclical timelines, and the controllability into personal and treatment control. The responses on the IPQ-R are coded as follows: Strongly disagree = 1; disagree = 2; neither agree nor disagree = 3, agree = 4; and strongly agree = 5. Seven questions within the subsets required reverse coding, and this was completed prior to data analysis. The questions that were reverse coded were: IPs 1, 4, 8, 15, 17, 18, and 19. Those questions were entered into SPSS via “Transform”-“Recode into same variable”-“Old and new variables”-

"Value" = strongly disagree = 5; disagree = 4; neither agree nor disagree = 3; agree = 2; and strongly agree = 1.

Scoring of the IPQ-R

In order to interpret the results on the IPQ-R, higher timeline scores (acute/chronic) indicate stronger beliefs about the chronicity of high blood pressure. Higher cyclical timeline scores indicate greater beliefs about the recurrent or episodic nature of high blood pressure. Higher consequences scores indicate greater beliefs about negative consequences related to high blood pressure. Higher scores on personal and treatment controls indicate positive beliefs about the controllability of high blood pressure.

Research Question #2

This question asked: What is the effect of a faith-based health devotional on select constructs of the Illness Representation Model in African Americans with high blood pressure? This question included four hypotheses, the first of which is discussed here:

> H_2. After using a faith-based health devotional, participants will demonstrate a statistically significant increase in the timeline scores on the Revised Illness Perception Questionnaire (IPQ-R).

Acute/Chronic Timeline Scores

As stated, H_2 cumulatively addressed the timeline construct and did not separate this question to evaluate timeline acute/chronic and timeline cyclical individually. The instrument of the IPQ-R, however, had separate sections that evaluated timeline acute/chronic as one variable and timeline cyclical as another. In light of this layout of the instrument, the data for the timelines were analyzed and presented separately.

Conversely, the interpretation of the data analysis was discussed as it relates to the hypothesis, which addressed all aspects of timeline as one variable. In presenting the timeline data, acute/chronic were analyzed first, followed by cyclical timeline.

Acute/chronic timeline, posttest means were $M = 3.14$ and the pretest means $M = 2.93$, (Table 6). There was a mean difference of .21, 95% CI (upper = .36, lower = .06), $df = 99$, $p = .003$ (Table 7). For the confidence interval (CI), the results indicate a 95% probability that if this study were replicated in the population, the mean difference in that study would fall within the upper and lower limits of this study's CI. The results were statistically significant (t [100] = 2.82, $p = .003$ [Table 7]), with a large positive ES ($r = .55$) (Table 8). The results indicate a significant positive correlation between the intervention and beliefs about the chronicity of high blood pressure. This implies that as a result of using the faith-based health devotional, participants gained better understanding of the long-term nature of high blood pressure. The report suggests that the intervention helped participants change their perception of the disease and thus H_2 related to timeline acute/chronic was supported.

Table 6

Timeline-Acute/Chronic - Post and Pretest Results (Paired Samples Statistics)

Acute/Chronic Timeline	*M*	*N*	*SD*	SEM
Posttest	3.14	100	.84	.08
Pretest	2.93	100	.80	.08

Table 7

Timeline-Acute/Chronic - Post and Pretest Results (Paired Sample Test)

	Paired Differences			95% Confidence Interval of the Difference		Statistic		
Variable	Mean Difference	*SD*	SEM	Upper	Lower	*t*	*df*	*p*
Acute/Chronic Timeline Posttest & Pretest	.21	.76	.076	.36	.06	2.82	99	.003

Table 8

Timeline-Acute/Chronic - Post and Pretest Results (Paired Samples Correlations)

Acute/Chronic Timeline	*N*	*r*
Posttest & Pretest	100	.55

Cyclical Timeline Scores

Cyclical timeline posttest means were $M = 3.11$ and the pretest means $M = 3.04$ (Table 9). Mean difference of .07, 95% CI (upper = .23, lower = -.09), $df = 99$, $p = .20$ (Table 10) with $r = .63$ (Table 11). Although there was an increase in the posttest means compared to the pretest means, the difference was not statistically significant (t [100] = .84, $p = .20$) see Table 10. Additionally the CI ranged from .23 to -.09, suggesting there is a possibility the result maybe due to chance. As a result, H_0 for this variable was accepted. Higher posttest means indicate greater beliefs about the cyclical or recurrent nature of high blood pressure. However, since the participants were tested at only one interval, and the cyclical nature of timeline would change intermittently; testing participants at different points in the cycle would capture more accurate representations about the cyclical nature of high blood pressure. The results that were captured from the

one-time testing is not an accurate measurement of cyclical perceptions, hence the probability the results may be due to chance.

Table 9

Cyclical Timeline - Post and Pretest Results (Paired Samples Statistics)

Cyclical Timeline	*M*	*N*	*SD*	SEM
Posttest	3.11	100	.95	.095
Pretest	3.04	100	.90	.09

Table 10

Cyclical Timeline - Post and Pretest Results (Paired Sample Test)

	Paired Differences			95% Confidence Interval of the Difference		Statistic		
Cyclical Timeline	Mean Difference	*SD*	SEM	Upper	Lower	*t*	*df*	*p*
Posttest & Pretest	.07	.81	.08	.23	-.09	.84	99	.20

Table 11

Cyclical Timeline - Post and Pretest Results (Paired Samples Correlations)

Cyclical Timeline	*N*	*r*
Posttest & Pretest	100	.63

Consequences Scores

The following hypothesis was tested:

H_3. After using a faith-based health devotional, participants will demonstrate a statistically significant increase in the consequences score on the IPQ-R.

The consequences posttest means were $M = 3.40$ and the pretest means $M = 3.25$ (Table 12). There was a mean difference of .15, 95% CI (upper = .298, lower = .002), *df*

= 99, p = .024 (Table 13). For the confidence interval, the results indicate a 95% probability that if this study were replicated in the population, the mean difference from repeated studies would fall within the upper and lower limits of the CI of this study. The results demonstrated a significant increase in the posttest results (t [100] = 2.01, p = .024) see Table 13 with a medium ES (r = .44) (Table 14). This finding indicates that the intervention resulted in greater beliefs about the negative consequences of high blood pressure, which was moderately correlated with the use of the daily devotional. As a result of the education, it can be assumed that participants gained greater understanding that there are negative consequences associated with poor blood pressure control, which should theoretically lead to better treatment adherence. Additionally, it is assumed that participants also gained understanding that consequences related to uncontrolled high blood pressure are reduced when blood pressure is managed appropriately. This was the desired outcome of the intervention and so H_3 was supported.

Table 12

Consequences - Post and Pretest Results (Paired Samples Statistics)

Consequences	*M*	*N*	*SD*	SEM
Posttest	3.40	100	.67	.067
Pretest	3.25	100	.74	.07

Table 13

Consequences - Post and Pretest Results (Paired Sample Test)

	Paired Differences			95% Confidence Interval of the Difference		Statistic		
Consequences	Mean Difference	*SD*	SEM	Upper	Lower	*t*	*df*	*p*
Posttest & Pretest	.15	.75	.075	.298	.002	2.01	99	.024

Table 14

Consequences - Post and Pretest Results (Paired Samples Correlations)

Consequences	*N*	*r*
Posttest & Pretest	100	.44

Personal Controllability Scores

The following hypothesis was tested:

H_4. After using a faith-based health devotional, participants will demonstrate a statistically significant increase in the perceived personal control scores on the IPQ-R.

Personal control posttest means were $M = 4.30$ and the pretest means $M = 4.11$ (see Table 15). There was a mean difference of .19, 95% CI (upper = .311, lower = .079), $df = 99$, $p = .0005$ (Table 16). For the confidence interval, the results indicate a 95% probability that if this study were replicated in the population, the mean difference from repeated studies would fall within the upper and lower limits of the CI of this study. The results were statistically significant (t [100] = 3.33, $p = .0005$) see Table 16, with a large ES ($r = .46$) (Table 17). This shows that the increased post-intervention results of

personal control over high blood pressure were highly positively correlated with the intervention. This suggests that as a result of using the daily devotional, there was an increase in participants' perceived locust of control related to high blood pressure management. The results were statistically significant and thus H_4 was supported.

Table 15

Personal Control - Post and Pretest Results (Paired Samples Statistics)

Personal Control	*M*	*N*	*SD*	SEM
Posttest	4.30	100	.54	.054
Pretest	4.11	100	.58	.058

Table 16

Personal Control – Post and Pretest Results (Paired Sample Test)

	Paired Differences			95% Confidence Interval of the Difference		Statistic		
Personal Control	Mean Difference	*SD*	SEM	Upper	Lower	*t*	*df*	*p*
Posttest & Pretest	.19	.59	.059	.311	.079	3.33	99	.0005

Table 17

Personal Control - Post and Pretest Results (Paired Samples Correlations)

Variable	*N*	*r*
Posttest & Pretest	100	.46

Treatment Controllability Scores

The following hypothesis was tested:

H_5. After using a faith-based health devotional, participants will demonstrate a statistically significant increase in the perceived treatment control scores on the IPQ-R.

Treatment control posttest means were $M = 4.10$ and the pretest means $M = 3.95$ (Table 18). There was a mean difference of .15, 95% CI (upper = .37, lower = .05), $df = 99$, $p = .002$ (Table 19). For the confidence interval, the results indicate a 95% probability that if this study were replicated in the population, the mean difference from repeated studies would fall within the upper and lower limits of the CI of this study.The result was statistically significant (t [100] = 2.91, $p = .002$) see Table 20, with a large ES ($r = .59$) (Table 20). This demonstrates that after the intervention, participants had greater beliefs that prescribed recommendations and treatment can control high blood pressure. These results were highly positively correlated with the intervention and H_5 for treatment control was supported.

Table 18

Treatment Control - Post and Pretest Results (Paired Samples Statistics)

Treatment Control	*M*	*N*	*SD*	SEM
Posttest	4.10	100	.52	.052
Pretest	3.95	100	.66	.066

Table 19

Treatment Control - Post and Pretest Results (Paired Sample Tests)

	Paired Differences			95% Confidence Interval of the Difference		Statistic		
Treatment Control	Mean Difference	*SD*	SEM	Upper	Lower	*t*	*df*	*p*
Posttest & Pretest	.15	.54	.054	.37	.05	2.91	99	.002

Table 20

Treatment Control - Post and Pretest Results (Paired Samples Correlations)

Treatment Control	*N*	*r*
Posttest & Pretest	100	.59

Summary

The current study evaluated the effects of a faith-based health devotional on illness representation of high blood pressure. The participants were African Americans who identified themselves as being diagnosed with high blood pressure and were members/attendees of Judeo-Christian churches in Southeast Florida. The goal was to structure high blood pressure education in the faith language, which is relevant to this population. The desired outcome was to have positive effects on illness representation of high blood pressure, as well increase knowledge of high blood pressure and how to prevent it. lllness representation was identified as a factor that influences people's behavior and is a major determinant of decisions about treatment choices related to illness (Leventhal, et al., 1997). Two research questions were posed and five hypotheses tested. Research question #1 evaluated the effects of the faith-based health devotional on knowledge of high blood pressure and how to prevent it. High blood pressure knowledge

was believed to be a baseline factor in illness representation. Additionally, since the intervention involved educating participants, it was necessary to test knowledge of high blood pressure to determine if the faith-based education made a difference. The results revealed highly correlated positive improvements in post-intervention scores related to high blood pressure knowledge and how to prevent it, which supports H_1. The findings authenticate the assertion that incorporating faith language into health interventions is a viable method for high blood pressure education in African Americans. Research question #2 evaluated the effects of the faith-based health devotional on illness representation of high blood pressure. The second hypothesis (H_2) related to illness representation acute/chronic timeline, H_3 addressing illness representation of consequences, H_4 for illness representation of personal control, and H_5 illness representation of treatment control, all attained statistically significant increases post-intervention. The results were moderately to highly correlated with the intervention. These all add value to faith-based approaches to patient health education when dealing with the African American population.

The second hypothesis (H_2) also evaluated the cyclical component of the timeline construct of illness representation. The results were not statistically significant ($p = .20$) and the confidence interval crossed the point of no difference. This leaves the possibility that the results were due to chance; thus the null hypothesis (H_0) was accepted (Cohen, 1988; Morgan et al., 2000). One possible reason for this outcome is that subjects were tested just once, post intervention, and not at additional intervals. Testing participants at different times would have allowed for data to be collected at different phases, providing more accurate information on cyclical changes in perceptions.

Overall, the data analysis revealed some robust results that are promsing for the advancement of nursing knowledge. The following chapter synthesizes the study findings, and discusses limitations, recommendations, and implications for nursing.

CHAPTER 5. DISCUSSION

This final section of the research discusses the findings of the study. It is divided into six sections, namely a) overview, which summaries the study problem, purpose and method, b) discussion, which includes the results in relation to the research questions and hypotheses, c) limitations, (d) recommendations, (e) implications for nursing, and (f) conclusion.

Overview

Whereas African Americans comprise only 13% of the United States (U.S.) population, they account for 42% of the high blood pressure/hypertension cases (National Center for Health Statistics, 2017; United States Census Bureau, 2018, paragraph 2). High blood pressure or hypertension is a precursor to cardiovascular diseases (CVD), the leading causes of death in the U.S. (American Heart Association, 2017b). For decades, there have been multiple targeted approaches to reduce this health disparity in African Americans (Mozaffarian, et al., 2016); however, adverse cardiac outcomes related to uncontrolled high blood pressure continue to pervade this group (Center for Disease Control and Prevention, 2018; Kung & Xu, 2015). In an effort to identify the stubborness of this finding in the African American population, this research identified the Illness Representation Model (IRM) which captures the essence of the problem: that people tend to await symptoms to identify with the diagnosis before seeking treatment. Those indicators then help patients to formulate a perceived threat to their well-being which in turn determines uptake of treatment to reduce the perceived threat by the disease. Another

principle essential to assist with identifying the problem of high blood pressure came from Leininger's Theory of Culture Care Diversity and Universality (TCCDU) which emphasizes nursing caring principles (Leininger, 1991; 1995; Leininger & McFarland, 2010). Leininger's Theory brought to view that in order to care for patients of varied cultures regardless of the disease condition, it is crucial for nurses to understand cultural norms, social structures, generic and folk practices that drive patient decision-making. Leininger (1991) also advises nurses and other healthcare professionals to insert such philosophical persepectives into patient care. Considering these two guiding principles, the researcher followed the priority targets of the Center for Disease Control and Prevention ([CDC] 2018) and Healthy People (HP) 2020 (2018) goals for health promotion and disease prevention and partnered with accessible faith-based communities. The researcher incorporated the principles of the IRM and TCCDU in the development of a faith-based intervention. The intervention was a five-day health devotional recognizing the African American community as one that practices reading daily devotional booklets for their meditation (Lynn, Yoo, & Levine, 2014). The purpose of this study was to examine the effects of a faith-based health devotional on illness representation of high blood pressure in African Americans. Two research questions were developed to guide the intervention and five hypotheses tested. The research questions included: a) What is the effect of a faith-based health devotional on knowledge of high blood pressure and how to prevent it in African Americans? and b) What is the effect of a faith-based health devotional on select constructs of the Illness Representation Model in African Americans with high blood pressure?

A one-tailed, quasi-experimental, quantitative design using simple descriptive analysis and paired samples *t*-test was used in this study. Basic knowledge of high blood pressure and how to prevent it were believed to be underlying contributors to illness representation and was evaluated using the High Blood Pressure Prevention IQ Quiz (HBPP-IQ). Additionally, since the intervention involved educating the subjects, pre/post knowledge levels were evaluated to determine if the intervention had an effect. The Revised Illness Perception Questionnaire (IPQ-R) quantified the perception of illness representation by deliniating five constructs, three of which were selected and evaluated in this study, namely, timeline, consequences, and controllability. A convenience sample of 100 ($N = 100$) male and female members from five African American Churches in Southeast Florida who met the inclusion criteria and signed the consent forms, participated in the study. Descriptive statistics was used to analyze the demographic data and paired samples *t*-test to analyze within-group differences on the quantitative data; the significance (p) was set at the .05 level.

Discussion

The results of this study indicate that the effects of the faith-based intervention on illness representation are quite promising for this African American church-going population. Four of the five hypotheses were significant, and the research questions were affirmatively answered. The merging of the IRM and the TCCDU was a successful approach to addressing high blood pressure illness representation in this population, as the beliefs and practices of African Americans were included in the intervention. So it was not surprising that the faith-based educational devotional booklet as an intervention drew African Americans' attention, for it used a language that is consistent with their

core values to assess scientific understanding, and potential compliance to managing high blood pressure. The devotional served a two-fold purpose, in that for five days it educated the population about high blood pressure and simultaneously satisfied their spiritual needs on a daily basis. It was asserted that increasing knowledge about high blood pressure is the first step in enhancing patient acknowledgement and ownership of the disease (Lewis, 2012), and the use of a culturally appropriate intervention opens up receptivity to the high blood pressure condition and willingess to manage it. In light of the prevalence and increased related mortality from uncontrolled high blood pressure in African Americans, CDC (2018) and HP 2020 (2018) advised researchers that devising novel ways of reducing the health burden is paramount. This work heeded those recommendations, and it resulted in a significant increase ($p < .000$) in knowledge about high blood pressure and how to prevent it. With the faith-based education approach in the form of a daily devotional booklet, African Americans in this small study were also able to increase their illness representation of high blood pressure. The results show the participants were able to appreciate timeline, consequences, and control: select constructs of the Illness Representation Model, to enhance their understanding of the disease. Figure 3 illustrates how the IRM and TCCDU were merged to create the faith-based health devotional booklet which facilitated significant increases in knowledge about high blood pressure, as well as significant increases in illness representation of high blood pressure as a real health threat.

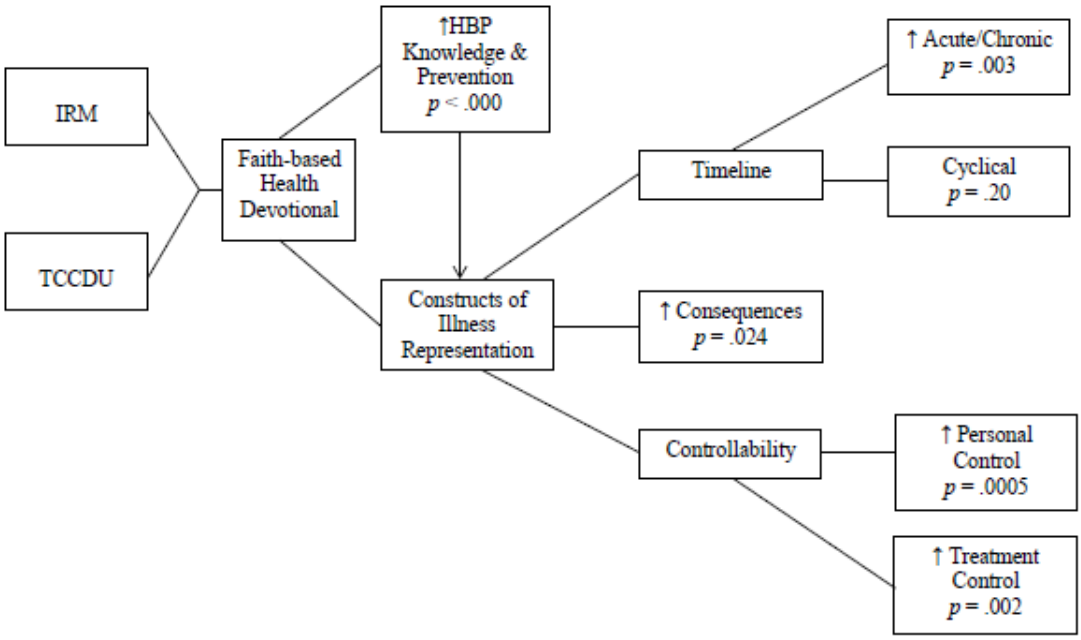


Figure 3. Summary of the outcomes of the intervention. Merging of the IRM and TCCDU to develop the faith-based health devotional resulted in significant improvements.

In this preliminary work, the acute and chronic representation of high blood pressure clustered together was significant (p = .003). These findings suggest that African Americans understand that in acute hypertension, blood pressure is extremely high often requiring hospitalization and is not cured upon hospital discharge. In addition, this group understands the long-term force of stress against the arterial walls in chronic high blood pressure and consequently the need to adhere to treatment plans including lifestyle modification both in acute and chronic cases. Enhancing African American patients' understandings of high blood pressure as a real, lifelong disease has been a long-standing challenge for nurses. However, presenting the high blood pressure information in the context that is relevant to this group allowed them to grasp the differences of acute and chronic high blood pressure. This key finding which is fundamental for knowldege dificit

has been implicated in treatment avoidance and mortality rates from high blood pressure (Amponsah, Tabi, & Gibbison, 2015; Fuchs, 2011).

Since patients with hypertension tend to measure blood pressure when they experience a threat, which is often when their blood pressure is elevated, African Americans did not perceive the episodic nature of the disease ($p = .20$). The group did not have data to assess understanding of the cyclic nature of high blood pressure beyond five days. This cyclical component of the timeline construct could be observed in a design where routine blood pressure testing and illness perception are measured at different periods throughout the intervention and over a longer timeframe.

The African Americans in this study understood the consequences of high blood pressure ($p = .024$) which means they were aware of the ramifications surrounding non-adherence to treatment. Equally, it follows that this population understood that diligence to treatment plan could result in favorable outcomes in this disease. This result is consistent with other studies identified in the literature review (Schoenthaler, et al., 2018; Stallings, 2016; Williams, et al., 2015). The IRM highlights how patients perceive consequences that are associated with high blood pressure. Again, knowledge of hypertension enhanced the awareness of the costs associated with uncontrolled high blood pressure. In the IRM, the consequences are typically negative and can be exaggerated by patients' perceptions, resulting in undesirable outcomes (Leventhal et al., 1992), and that is further supported by Reynolds, et al. (2009) that perceptions of serious consequences of high blood pressure are associated with poorer quality of life. Therefore, when dealing with certain African Americans who embrace the idea that sickness is punishment from God (Fallon, et al., 2013; Franklin, et al., 2007), such teaching on the

consequences should be done with much caution. Undeniably, fatalism related to perceptions about disease has been implicated in African Americans treatment avoidance (Johnson, et al. 2005). Therefore, the tenets in the TCCDU admonish nurses in varying roles to be cognizant of the patients' point of need, and provide care that is culturally competent. In this case, identifying and appropriately incorporating scriptures like: "I will restore you to health, and I will heal you of your wounds" (Jer 30:17) can be inserted into health interventions and will probably serve as a buffer for fatalism. Assuredly, being keen to determinants of health like fatalism is vital to disease outcomes in African Americans.

African Americans in this study understood that they have power to control their high blood pressure (p = .0005) which is through the knowledge and the daily reminders indicating the power they have in Christ regardless of life's challenges (Phil. 4:13). Multiple studies have demonstrated that representations about increased personal control over disease have been related to better medication adherence (Turrise, 2016), improved self-care (Reynolds, et al., 2009), and healthier dietary habits (Stallings, 2016; Coutu, et al., 2003). Any variable such as "increased personal control" that has the potential to enhance African Americans' self-management of high blood pressure is desirable, noteworthy, and warrants further scrutiny. The IRM highlights how social influences [like church groups] are beneficial to perceived personal control over disease (Leventhal et al., 1997; Leventhal et al., 1992; Leventhal et al., 1980), and the TCCDU underscores the reality of the church influence on healthcare choices in various ethnic groups (Leininger, 1991, 1995) such as African Americans. Continued use of the faith-based

devotional booklet can facilitate modeling of positive health behaviors in alignment with cultural and religious beliefs thereby influencing others into healthy habits.

The fifth hypothesis was also significant (p = .002): African Americans understood that they have control of their treatment and can use available support to assist them with coping with this silent killer. Prescribed medication is one of the treatment controls that subjects now understand fully will impact their illness. After all, their religious teaching perceives the human body as "the Temple of God" and destroying the temple will not resonate favorably with their God (1 Cor. 3:17). Non-adherence to medications is a major factor in the disease burden of high blood pressure in African Americans (Lewis, 2012) and has been a major contributor to adverse outcomes (Grigoryan et al., 2012; Kung & Xu, 2015). Being able to effect positive changes that will improve medication adherence and preserve the "body temple" are necessary, and framing health information in the context of Bible messages in this current study positively correlated with the outcome (r = .59). Turrise (2016) was able to demontrate that low perception about treatment control of medications contributed to increased 30-day hospital readmissions in patients with heart failure. Coutu, et al. (2003) demonstrated that adequate illness representation resulted in decreased total cholesterol and improved dietary habits. Multiple studies corroborate the positive outcomes on weight (Christie, et al., 2010), physical activity (Tussing-Humphreys, et al., 2013), healthy lifetstyle (Brewer, et al., 2017), and balanced diet (Resnicow, et al., 2005) that are produced when affiliated with health interventions in the church. The literature and this current study authenticate the value of faith-based interventions and the importance of enhancing illness representation to improve diseases outcomes.

The power of church leadership cannot be overstated; Marshall and Archibald (2015) pointed out that in a culture where spirituality and healing are central to the well-being of the people, religious leaders are hoisted to a position of a level of credibility that is effective for behavior change. Rowland and Isaac-Savage (2014) refer to faith leaders as the gatekeepers in their congregations. Therefore, the prominent leaders such as pastors, leaders of age and gender-specific ministries in this study, are poised to influence their departments and community members who might be suffering with high blood pressure.

Reduced reception of disease presence was also identified in this group in that initially 22% of them did not believe their high blood pressure diagnosis, because identifying with high blood pressure was probably "claiming" the illness versus proclaiming their healing, which might be grounded in their beliefs. The health devotional included scriptures that admonish believers to recognize the value of healthcare providers (Matt. 9:12) and prayer/prosperity in health (3 John 2) in addition to the necessity of faith and works for the ultimate healing (Heb. 11:1). The current exploration unearthed scientifically observable health beliefs forging a probable path via their culture to improve health behaviors, in this highly religious population.

It would be unwise to think that the results of this study were due solely to the use of the faith-based devotional. The significant effects noted in this study were probably due to several other explanations in addition to the use of the faith-based devotional. According to Polit and Beck (2018), intervening variables can intercept and compete for changes in the dependent variables, which might trick researchers to credit the independent variable(s). Therefore, a closer examination of the demographics of the

study is necessary. First, 70% of the sample identified themselves as being of Caribbean descent (Afro-Caribbean) a sub-group of the African American community. This population distribution is understandable since the largest concentrations of Afro-Caribbean people are in Dade and Broward counties of Florida (Zong & Batalova, 2016). Church attendance and participation are essential to the teachings of this group (Nguyen et al. 2016) since they expect general life guidance beyond spiritual integrity from their church leaders, and involvement speaks to their level of spirituality (Chandler, 2017; Archibald, 2011).

Another factor that might contribute to the results is the greater number of women in the study - a finding which converges with the literature (Abbott, Schluck, Graven, & Martorella, 2018; Bangurah et al., 2017; Sealea et al., 2013). Undeniably, women tend to exemplify hunger for health information since they are inclined to have more negative perceptions about the severity of their health status (Fox, 2011; Smith, Tucker, Arthur, Wippold, & Tran 2017). This group of predominantly Caribbean women with their newly acquired high blood pressure awareness, coupled with the nurturing instinct of women in general are now positioned to make intentional action toward improving health at individual, family, and community levels through approaches such as modeling and teaching.

Since daily meditations include the use of devotionals, a practice that is supported from the scriptures (2 Timothy 4:15), anecdotes from participants revealed continued use of the devotional beyond the study period and a willingness to share the knowledge – a strength of faith-based (versus faith-placed) interventions. Holt et al. (2008) comparably conducted a breast cancer intervention for women using a similar health booklet that was

infused with Biblical messages. In their study, participants using the spiritually-guided materials formed more personal connections with the content. Being able to create subjective associations with health information enhances understanding of the disease and will quite likely impact management choices. This is important when dealing with an asymptomatic condition like high blood pressure, as lack of disease recognition has affected disease morbidity (Amponsah et al., 2015; Ogedegbe et al., 2012). Similarly, Tettey, et al. (2016) developed a faith-based educational manual to address CVD risk factors in a group of African American participants, and the results demonstrated statistically significant improvements in three out of four variables that were tested (blood pressure, BMI, and blood pressure knowledge). The Tettey, et al. study also lends support to the viability of directly incorporating faith language into patient education. Studies with the faith-based teaching approach for health education are limited, and this current work highlights the need for future similar research.

Disturbingly, this group of college educated members who, as Stallings (2016) said, " … may have some degree of understanding the beneficial effects of lifestyle modification" (p. 496), is also suffering from the preventable health condition of high blood pressure; therefore, this work needs to be continued and extended in this population. The finding suggests that further exploration of variables to provide understanding of health threats that is, illness representation, is indicated. In this way, nursing will be able to gain insights of patients' foundational beliefs about illness, which can ultimately improve treatment reception. After all, if greater patient cognitive abilities, as noted in this study, are not lessening health risks, then culture-specific innovative approaches are warranted to address health disparities like high blood pressure. This

current work adds to the exsisting strong recommendations to partner with the church community to improve health outcomes of high blood pressure. In partnering with the faith community, deaths and hospitalizations related to high blood pressure among African Americans could be reduced when the healthcare providers have more comprehensive understandings of the causes, and are able to tailor and implement interventions that are culturally appropriate for management (Butler-Ajibade, Booth, & Burwell, 2012; Tettey, et al., 2017; Tussing-Humphreys, et al., 2013; Whitt-Glover, et al., 2012). Additionally, researchers can capitalize on this information by soliciting more engagement of pastors in health research, and devising ways to allow the pastors' involvement to result in meaningful partnerships for them, their congregations, and the health community.

Limitations

While this pilot study supported faith-based health education, and the results produced some robust findings, there are some notable limitations to the study. This was a small sample of the Judeo-Christian church population; this affects generalizability of the findings to other African American ethnicities and the applicability to African Americans of other religious affiliations. The quasi-experimental design and the pre-posttesting on one group of subjects did not allow for randomization. Consequently, there were no data to discriminate the efficacy of the faith-based health devotional intervention compared to standard high blood pressure education among the African American population. Other flaws in this work is that the intervention was of a short duration and participants completed the posttesting at home, which could question the degree of credibility of the data. Also, interval follow-up evaluation was not part of the design

which could have provided data about sustainabilty of the education, and the effects on the cyclical timeline of illness representation. Finally, biometric information of high blood pressure readings were not collected. This information undoubtedly would have strengthened the study results.

Recommendations

Recommendations for future research involve replicating the study using a larger sample size. A randomized comparative study is recommended with the faith-based devotional intervention for the experimental group and standard high blood pressure education for the comparison group. A study that includes African Americans of other religious persuasions in a cross-sectional study is also indicated. Expanding the faith-based health devotional from a five-day booklet to a 30-day booklet would allow for lengthier exposure to the information. Longitudinal re-evaluation of subjects over intervals of three, six, and 12 months to gather data on sustainability of the results is advisable. Since a large number of the participants identified themselves as African American of Caribbean heritage, replicating this study using American born and raised African Americans might identify factors in beliefs that have impact on high blood pressure outcomes or to discover if the outcomes are shared among the ethnic groups. This could be accomplished using a mixed method approach since the qualitative component will address participants' perceptions. Measuring of biometric data, including blood pressure, would allow for correlations to be made between the teaching method and the biometric results. A study using younger adults is also indicated since high blood pressure is increasing among this age group. Lastly expanding the study to be translated in other languages like Spanish or French could be considered, since other ethnicities of

African Americans may also be disproportionately respresented in the high blood pressure mortality rates.

Implications for Nursing

It is through nursing research that knowledge is generated to set standards for nursing education, practice, and policy. Integral to this knowledge generation, is highlighting the determinants of health, which include social and cultural factors that help patients to identify and manage disease. This current research recognized the role of faith as a determinant of health in African Americans and such belief demonstrated remarkable beneficial outcomes when intertwined with health education. Expanding on these findings, more nursing research about chronic diseases in African Americans should incorporate the faith language as a variable.

Nursing practice is ever-evolving but maintains the core essence as defined by the World Health Organization (2018): Nursing is the "autonomous and collaborative caring for people of all ages and involves health promotion, disease prevention, and caring for the healthy, infirmed, or dying" (paragraph 1). Additionally, nursing practice emphasizes compassion, which allows the nurse to move patient care in the direction of the patient and to connect with their suffering (Carper, 1978; Leininger & McFarland, 2010; Roach, 1984). African American patients seek care daily, and nurses are at the forefront, well-aligned to provide competent, culturally-congruent nursing care. High morbidity and mortality rates related to high blood pressure among African Americans have seen little decline over the years (Kung & Xu, 2015; Mozaffarian, et al., 2016; National Center for Health Statistics, 2017), and nurses are charged with continuously seeking out creative and scientifically efficacious ways to enhance cardiovascular health in this population.

This current research was grounded in the disease model of illness representation, which helps to clarify how African Americans understand and cope with high blood pressure. Incorporating salient spirtual messages with health information among African Americans produced desirable results in this group. This translates into strengthening the appeal from the American Nurses Association (Marion, et al., 2016) for cultural competency – a sentiment that has been expressed in other nursing forums (Lowe & Archibald, 2009). Nurses ought to place more emphasis on evaluating the spiritual practices of African American patients and incorporating those beliefs and practices into patient care.

Connecting with the African Americans in this study with culturally-appropriate tools, they are likely to become empowered with the necessary skills to manage their high blood pressure. It follows then that continued effort to improve nursing education to equip nurses with knowledge to care for patients of all ethnicities is paramount, just as generating innovative ways for effective patient education about diseases are essential. This approach should result in value-added patient participation in their personal healthcare to ultimately improve health outcomes.

The IRM discusses the contructs that determine how patients identify with disease and how they determine their treatment choices (identity, causal mechanism, timeline, consequences, and controllability). The TCCDU elucidates the various factors that people of diverse cultures involve in their healthcare. Those culture-specific factors include social influences (family, church, friends, etc.), folk care (traditional remedies to treat disease), and professional care (treatment through trained healthcare practitioners). Both philosophies emphasize external factors that are influential in the personal internal

connections that patients create, and ideas they formulate about disease. These ideas ultimately drive their decision-making related to health. Faith in African Americans is interconnected with their daily lives, for faith involvement in the education improved participants' acknowledgement of the disease, which, in turn, suggests the likelihood of engaging in disease management. Faith-based information in nursing education about chronic diseases like high blood pressure will add to nurses knowledge of the various cultural components to patient health and prepare the next generation of nurses to manage patients at varying stages of health.

The current research has global nursing policy implications as using the faith-based health devotional format could be considered as a means of routinely providing health information to people of African descent in general. As health policy progresses, there remains a need for culturally appropriate approaches to patient care in various ethnic groups. Health care reform in the United States is ever-changing, and since 2010, it has opened up greater access to healthcare for many patients of varied ethnicities and generated influxes of new patients into the health system (Moore, 2017). This influx has created an ideal environment for advance practice nurses to fill the need for primary care providers (Edwards, 2014; Jones, Rosemberg, & Wright, 2017). Trailing increased numbers of patients is the need for improved standards of care. The Joint Commission (2010) sets practice standards for acute-care settings like hospitals and has built into its roadmap the mandate of cultural competence. This cultural competence is the ability of nurses and healthcare organizations to respond effectively to the cultural needs of patients seeking care. Additionally, the Accreditation Association for Ambulatory Health Care (AAAHC, 2017) sets practice quality standards for ambulatory healthcare settings and is

focused on patient-centered care in the form of medical homes. Inherent to the concept of patient-centered care is a holistic approach that incorporates all contributors to health, including the cultural components (Carver & Jessie, 2011). Dyess and Chase (2010) suggested that as health reform aims to enhance the delivery of healthcare, consideration should be given to caring community models that incorporate faith and collaboration of multi-discipline health practitioners for aging in diverse populations. As the literature demonstrated, comorbidities related to high blood pressure increase with age, and as the African American population ages, they will benefit from this faith-community approach to address conditions like high blood pressure. This current research demontrated some positive outcomes that can be anticipated with health strategies in faith-communities. Since this research added valuable data in support of faith-based health interventions in African Americans, establishing policy that incorporates the cultural components to patient care, including the faith language, would be critical to delivering culturally tailored, whole-person care for African Americans. A recommendation endorsed in the literature (Archibald, 2011; Archibald & Newman, 2015; Jolly, Archibald, & Liehr, 2013; Marshall & Archibald, 2016; Marshall & Archibald, 2015) described how critical it is to culturally tailor health interventions in ethnic groups like African Americans to reduce health disparities through means that may not be available in conventional healthcare.

Conclusion

The African American population has been known to persistently suffer greater morbidity and mortality rates related to high blood pressure (Kung & Xu, 2015; National Center for Health Statistics, 2017). Nurses, as a part of the global healthcare team, are

charged with finding ways of reducing this health disparity. The CDC (2018) and HP 2020 advised researchers to develop novel approaches to combating this health inequity. Prior studies have gained much success in using faith-based interventions to improve health outcomes in the African American population (Brewer, et al., 2017; Schoenthaler, et al., 2018; Tettey, et al., 2017); and those previous researchers recommend that future researchers try this method in different populations. Two frameworks guided this study: The Illness Representation Model ([IRM]; Leventhal et al., 1997; Leventhal et al., 1992; Leventhal et al., 1980) and The Theory of Culture Care Diversity and Universality ([TCCDU]; Leininger, 1991, 1995). The IRM allows patients to better understand their illness - illness representation of high blood pressure, and the TCCDU advocates incorporating the cultural values in any approach to provide care. Professing and practicing Christian beliefs is a key factor in the lives of African Americans since slavery (Chandler, 2017), and the use of a devotional booklet is popular for daily meditations (Patterson, 2014). This assertion was corroborated in this current research where 82% of the participants concurred that they used a devotional, with 65% of those using a booklet format. As such, this intervention developed a faith-based health devotional meditation booklet which incorporated high blood pressure teachings interspersed with relevant Bible scriptures. The booklet was formatted similar to the "Daily Bread" (Ceta, et al, 2014) with daily topics, a relevant story linked to knowledge or management of high blood pressure, and a verse of scripture. One hundred African Americans diagnosed with high blood pressure, ages 35-80 years old in five Southeast Florida churches participated in a study to test knowledge of high blood pressure, and the timeline, consequences, and control constructs of illness representation. Quasi-experimental pre and posttesting of the

participants was done prior to and after reading the five-day devotional, and the results were encouraging. Through the faith-based method using a booklet health devotional, this reasearcher was able to produce significant increases in participants' knowledge of high blood pressure and how to prevent it. Additionally the research demonstrated significant improvements in illness representation of high blood pressure timeline, consequences and controllability. Clearly, this one time observation of results calls for more closer inspection using a different design and sample size. However, these outcomes bring us closer to targeting a population at risk for increased mortality. It adds vital information to the body of nursing knowledge. For the first time, Illness Representation is tested among a population of predominantly Afro-Caribbeans. Hence, the need to continue this faith-based work to reduce the health disparity of high blood pressure in all African Americans. After all, "Beloved, I wish above all things that you would prosper and be in health, even as your soul prospers" (3 John 2). This scripture verse addresses the Creator's desire that the physical body be nursed alongside the spirit which is a holistic mind-body-spirit approach to nursing care. Salient scriptures like these highlight the connection between spiritual teachings and health, which are important associations to make when caring for African Americans.

APPENDICES

Appendix A. Church Approval Letters

[redacted]

July 19, 2016

In regards to: Doctoral Study Request

Gina Daye, MSN, PhD-Candidate

Florida Atlantic University, College of Nursing

Dear Ms. Gina Daye,

[redacted] gives you permission to conduct your research in our church, "Effects of a Faith-Based Health Devotional on Illness Representation of High Blood Pressure in African Americans". If you have any further questions or need clarification, please feel free to contact me at [redacted]

Sincerely,

[redacted]
Pastor

[redacted]

[redacted]

April 20, 2016

Dear Ms. Gina Daye,

[redacted] is a place of worship that has an extensive reputation of supporting any meaningful work to assist our community. We are particularly excited about helping members from our Caribbean background.

[redacted] has received your request for participation in a study entitled, *"Effects of Faith-based Health Devotional on Cognitive Representation of High Blood Pressure in African Americans"*. I hereby give your permission to access my congregation for you to conduct this relevant research for our people. Although we are predominantly of Caribbean descent, we have a number of African Americans who might fit your needs.

Please let us know the dates and if there is anything else you need that we can provide for successful completion of your dissertation. God bless you and thanks for inviting us to be part of this effort.

Sincerely,

[redacted]

[redacted]

Florida Atlantic University
Christine E. Lynn College of Nursing

May 25, 2016

Please allow this correspondence to serve as an official notice verifying an agreement with Gina Daye granting her permission to conduct her Doctoral research study, "The Effects of a Faith-Based Health Devotional on Illness Representation of High Blood Pressure in African Americans" with [redacted]

Should you need any further verifications are have any questions do not hesitate to contact our office at the listed below.

Respectfully,

[redacted]

Senior Pastor

[redacted]

[redacted]

May 24, 2016

Dear Ms. Gina Daye

[redacted] is pleased to have you conduct your study entitled "The Effects of a Faith-Based Health Devotional on Illness Representation of High Blood Pressure in African Americans" at our church. We realize the seriousness of high blood pressure as a disease and applaud your efforts in conducting this research.

If you have any questions or concerns, do not hesitate to contact me.

Warm Regards,

[redacted]

[redacted]

April 26, 2016

Miss Gina Daye,

[redacted] is pleased to participate in your doctorial research program "The Effect of a Faith Based Health Devotional on Illness Representation on High Blood Pressure in African American." We recognize that more studies need to be done to help African American improve their health and we are honored that you have chosen this topic.

We anxiously await your return so we can freely participate and partner with you in your study.

[redacted]

Appendix B. IRB Approval

Institutional Review Board
Division of Research
777 Glades Rd.
Boca Raton, FL 33431
Tel: 561.297.1383
fau.edu/research/researchint

Charles Dukes, Ed.D., Chair

DATE:	December 5, 2016
TO:	Cynthia Archibald, PhD
FROM:	Florida Atlantic University Social, Behavioral and Educational Research IRB
IRBNET ID #:	956332-1
PROTOCOL TITLE:	[956332-1] Effects of a Faith-Based Health Devotional on Illness Representation of High Blood Pressure in African Americans
PROJECT TYPE:	*New Project*
ACTION:	APPROVED
APPROVAL DATE:	December 5, 2016
EXPIRATION DATE:	December 5, 2017
REVIEW TYPE:	Expedited Review
REVIEW CATEGORY:	Expedited review category # *B7*

Thank you for your submission of New Project materials for this research study. The Florida Atlantic University Social, Behavioral and Educational Research IRB has APPROVED your *New Project*. This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

- This study is approved for a maximum of **200** participants.
- It is important that you use the approved, stamped consent documents or procedures included with this letter.
  - Adult Consent Form (stamped)
  - Advertisement Flyer (stamped)
  - Protocol (stamped)
- ****Please note that any revision to previously approved materials or procedures, including modifications to numbers of subjects, must be approved by the IRB before it is initiated.** Please use the amendment form to request IRB approval of a proposed revision.
- All SERIOUS and UNEXPECTED adverse events must be reported to this office. Please use the appropriate adverse event forms for this procedure. All regulatory and sponsor reporting requirements should also be followed, if applicable.
- Please report all NON-COMPLIANCE issues or COMPLAINTS regarding this study to this office.
- Please note that all research records must be retained for a minimum of three years.
- **This approval is valid for one year.** A Continuing Review form will be required prior to the expiration date if this project will continue beyond one year.

If you have any questions or comments about this correspondence, please contact Donna Simonovitch at:

Institutional Review Board
Research Integrity/Division of Research
Florida Atlantic University
Boca Raton, FL 33431
Phone: 561.297.1383
researchintegrity@fau.edu

* Please include your protocol number and title in all correspondence with this office.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within our records.

Appendix C. Announcement Flyer

High Blood Pressure Research Study

Purpose: To evaluate the effects of a faith-based health devotional on Illness Representation of high blood pressure in African Americans (or Blacks)

Who CAN Participate?

- Anyone who identifies as being Black or African American
- Has been diagnosed with High Blood Pressure
- Is of ages 35 -80 years
- A Christian and member or regular attendee of a Christian Church
- Able to read, write and speak English

Who CANNOT Participate?

- Short-term visitors to the church (*participants must be available in the area for the full length of time to complete and return the study surveys*)
- People who need assistance with making their decisions (*we would like your personal, individual responses and not the opinion of someone else)*

When: Date to be announced

Benefits: You will get information about high blood pressure and provide valuable feedback on how to help manage high blood pressure in Blacks

Risks: There is a risk of disclosing to others that you have high blood pressure when you sign up for this study

Incentives: After completing and returning the study to the researcher, you will receive a $10 Walmart gift card

Length of the Study: Total of seven (7) days (about 10 minutes each day).

Hosting Institution: Florida Atlantic University, Christine E. Lynn College of Nursing

Contact: Gina Daye, MSN, PhD-(c) [redacted] or Cynthia Archibald, PhD, RN [redacted]

FAU

Approved on:	12/5/2016
Expires on:	12/5/2017

Institutional Review Board

Appendix D. Demographic Sheet

ID # 0001

Demographic Sheet

1. **Which of these groups best describes your Black identity?**
   A. American C. African
   B. Caribbean D. Hispanic

2. **What is your gender?**
   A. Male B. Female C. Other_____

3. **What is your age?**
   A. 35-39 years C. 50-59 years E. 70-80 years
   B. 40-49 years D. 60-69 years F. Other_____

4. **Have you been diagnosed with high blood pressure by a medical provider?**
   Yes_____ No_____

5. **Do you believe that you actually have high blood pressure?**
   Yes_____ No_____

6. **Are you a member or regular attendee of a Christian church?**
   Member____ Regular Attendee____

7. **Which is your worship day?**
   A. Sunday B. Saturday C. Other_____

8. **What is your church denomination?**
   A. Baptist C. Adventist
   B. Pentecostal D. Other_____

9. **What is your marital status?**
   A. Single C. Separated E. Widowed
   B. Married D. Divorced F. Other _____

10. **What is your highest education level?**
    A. Elementary (Primary) D. Vocational/Trade School G. Other_____
    B. Middle School E. College (Undergraduate)
    C. High School (Secondary) F. College Graduate/Post Grad

11. **Do you use a daily devotional?** Yes_____ No_____
    If yes, what format do you use? Booklet___, Internet___, Text___, Phone Call___, Other_____

Appendix E. Pretest Revised Illness Perception Questionnaire

ID #0001

Pre-Test
Revised Illness Perception Questionnaire

We are interested in your own personal views of how you now see your high blood pressure. Please indicate how much you agree or disagree with the following statements about your high blood pressure by ticking the appropriate box.

	Views about your high blood pressure	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
IP1	My high blood pressure will last a short time					
IP2	My high blood pressure is likely to be permanent rather than temporary					
IP3	My high blood pressure will last for a long time					
IP4	This high blood pressure will pass quickly					
IP5	I expect to have this high blood pressure for the rest of my life					
IP6	My high blood pressure is a serious condition					
IP7	My high blood pressure has major consequences on my life					
IP8	My high blood pressure does not have much effect on my life					
IP9	My high blood pressure strongly affects the way others see me					
IP10	My high blood pressure has serious financial consequences					
IP11	My high blood pressure causes difficulties for those who are close to me					

1

	Views about your high blood pressure	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
IP12	There is a lot which I can do to control my symptoms					
IP13	What I do can determine whether my high blood pressure gets better or worse					
IP14	The course of my high blood pressure depends on me					
IP15	Nothing I do will affect my high blood pressure					
IP16	I have the power to influence my high blood pressure					
IP17	My actions will have no affect on the outcome of my high blood pressure					
IP18	My high blood pressure will improve in time					
IP19	There is very little that can be done to improve my high blood pressure					
IP20	My treatment will be effective in curing my high blood pressure					
IP21	The negative effects of my high blood pressure can be prevented (avoided) by my treatment					
IP22	My treatment can control my high blood pressure					
IP23	There is nothing which can help my high blood pressure					
IP24	The symptoms of my condition are puzzling to me					
IP25	My high blood pressure is a mystery to me					
IP26	I don’t understand my high blood pressure					

	Views about your high blood pressure	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
IP27	My high blood pressure doesn't make any sense to me					
IP28	I have a clear picture or understanding of my high blood pressure					
IP29	The symptoms of my high blood pressure change a great deal from day to day					
IP30	My symptoms come and go in cycles					
IP31	My high blood pressure is very unpredictable					
IP32	I go through cycles in which my high blood pressure gets better and worse					
IP33	I get depressed when I think about my high blood pressure					
IP34	When I think about my high blood pressure I get upset					
IP35	My high blood pressure makes me feel angry					
IP36	My high blood pressure does not worry me					
IP37	Having this high blood pressure makes me feel anxious					
IP38	My high blood pressure makes me feel afraid					

Appendix F. Pretest Check Your High Blood Pressure Prevention IQ

ID # 0001

Pre-Test

Check Your High Blood Pressure Prevention IQ

1	There is nothing you can do to prevent high blood pressure.	**TRUE or FALSE**
2	If your mother or father has high blood pressure, you'll get it.	**TRUE or FALSE**
3	Young adults don't get high blood pressure.	**TRUE or FALSE**
4	High blood pressure has no symptoms.	**TRUE or FALSE**
5	Stress causes high blood pressure.	**TRUE or FALSE**
6	High blood pressure is not life-threatening.	**TRUE or FALSE**
7	Blood pressure is high when it's at or over 140/90 mm Hg.	**TRUE or FALSE**
8	If you're overweight, you are two to six times more likely to develop high blood pressure.	**TRUE or FALSE**
9	You have to exercise vigorously every day to improve your blood pressure and heart health.	**TRUE or FALSE**
10	Americans eat two to three times more salt and sodium than they need.	**TRUE or FALSE**
11	Drinking alcohol lowers blood pressure.	**TRUE or FALSE**
12	High blood pressure has no cure.	**TRUE or FALSE**

Prepared by the National Heart, Lung, and Blood Institute, National Institutes of Health

Appendix G. Consent Form

ID # 0001

ADULT CONSENT FORM V.2--11/18/2016

1) Title of Research Study: Effects of a Faith-Based Health Devotional on Illness Representation of High Blood Pressure in African Americans

2) Investigator(s): Cynthia Archibald, PhD, RN and Gina Daye, MSN, ARNP, PhD-(c)

3) Purpose: The purpose of this study is to evaluate the effect of a faith-based health devotional on illness representation of high blood pressure in African Americans (or Blacks)

4) Procedures: You are being asked to be a part of this research since you meet the study requirements. After you have signed this consent, you will be given three forms to complete on the same day. It will take about 15-20 minutes to complete the forms and give them back to the researcher. After returning the three forms, you will be given a booklet devotional and a sealed envelope with two forms in it to take home. The booklet is to be read over the next five days (one devotion per day). Each devotion should take about five to ten minutes to read. On the fifth day after you finish the devotional, please fill out the two forms in the envelope and put them back in the envelope (this should take about 15 to 20 minutes). Bring the envelope with the two forms to church with you on the designated day to turn in to the researcher. You may keep the booklet devotional. Once you turn in the envelope to the researcher, you will be given a $10 Walmart gift card as a thank you.

5) Risks: There is a minimal risk of participating because others who qualify will know you have high blood pressure as well. However, the extent of your condition will not be discussed with any person in the church.

6) Benefits: The benefits of participating is that you will provide valuable information to the healthcare community on how combining health topics with faith messages affects the understanding of a disease like high blood pressure in Blacks. This knowledge will help guide the researcher on how to include faith in the care of high blood pressure. You will also learn some important information about high blood pressure.

7) Data Collection & Storage: Identification numbers instead of names will be used on the forms. Any information collected about you will be kept confidential and secure and only the people working with the study will see your data, unless required by law. The data will be kept for three years in a locked cabinet, or on a password-protected computer in the investigator's office. After three years, paper copies will be destroyed by shredding and electronic data will be deleted. We may publish what we learn from this study, and if we do, we will not let anyone know your name/identity unless you give us permission.

8) Contact Information:

- If you have questions about this study, you should call or email the principal investigator(s), Cynthia Archibald, PhD, RN at [redacted], email ***archibal@health.fau.edu***. Or Gina Daye, MSN, PhD-(c) [redacted], email ***gdaye@health.fau.edu***.
- If you have questions or concerns about your rights as a research participant, contact the Florida Atlantic University Division of Research, Research Integrity Office at (561) 297-1383 or send an email to researchintegrity@fau.edu.

9) Call reminders (OPTIONAL):

Would you like a reminder call or text at the beginning of the study to start reading the devotional?
Yes_____ No_____
If **yes**, please put a contact number for a reminder call or text: _____
Which would you like: Call_____ Text_____ Both_____
Would you like a reminder call at the end of the study to bring the completed forms back to church?
Yes____ No_____

Participant Initials: _____

10) Consent Statement: I have read or had read to me the preceding information describing this study. All my questions have been answered to my satisfaction. I am 18 years of age or older and freely consent to participate. I understand that participation in this study is voluntary, and I am free to withdraw from the study at any time without penalty. I have received a copy of this consent form.

Printed Name of Participant: _____

Signature of Participant: _____ Date: _____

Appendix H. Instructions Cover Page for Using the Daily Devotional

Instructions

Step 1

Read **one devotion per day** for the next **FIVE** days from the daily devotional entitled **"God's Plan for Your Health"**

Step 2

After completing the devotional, answer the questions on the surveys in the enclosed envelope

Step 3

Return the envelope with the completed surveys to the researcher on the designated day to receive your $10 Walmart gift card

Please do not share your answers with anyone since we would like to get your own personal responses. Thank you for participating in this study

Appendix I. Faith-Based Health Devotional

God's Plan

For Your Health

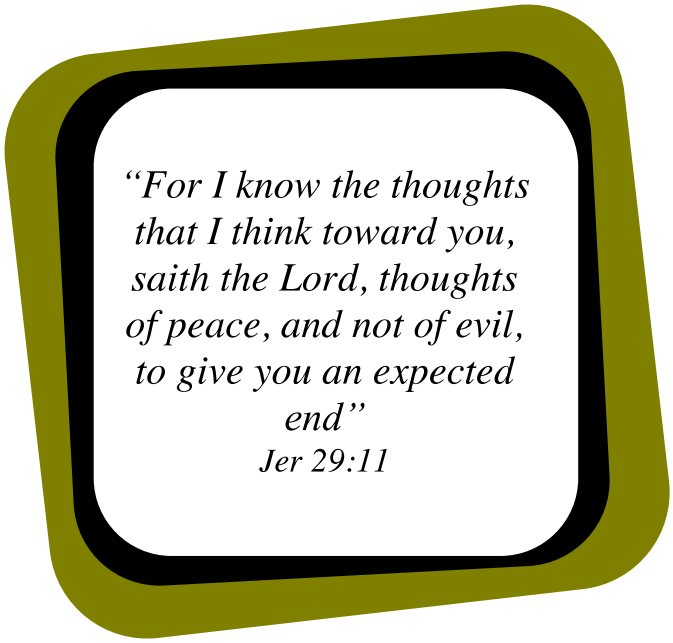
5-Day Devotional

Gina Daye, MSN, ARNP-C
PhD-Candidate

Table of Contents

Introduction

"For God so loved the world that He gave His only begotten Son, that whosoever believeth in Him should not perish, but have everlasting life…" John 3:16. We oftentimes forget how precious we are to God, especially when we are in the midst of life's overwhelming problems and sicknesses. It may be difficult to understand some of the things that happen, and when diseases like **high blood pressure** come in, people may think they are being punished for past sins or "evil spirits" have crept in. God's word however tells over and over again about how much He loves us and cares for us. During the next five days, these daily devotions will help to show the great provisions that God made for dealing with health conditions like **high blood pressure**, and will serve as a reminder that you are never alone, **"I will not leave you or forsake you"** Deut 31:16.



Day 1

Help Me to See

A few years ago in Orlando Florida a man was asleep in his bed when a large sinkhole opened up under his house, and swallowed the entire house including him. In just a few minutes everything was gone- the structure and contents of the house, and all the surrounding property. Just the day before, everything looked normal. Did anyone see signs of a sinkhole?

High blood pressure is a medical condition that is similar to a sinkhole. Everything on the outside may look and feel normal, while the pressure is getting so high, that it takes a stroke or heart attack for a person to acknowledge that high blood pressure is there. **A person might wait for feelings like a headache or blurry eyesight before taking medication, and by then it is too late**.

Sometimes it is hard to understand or believe that such a serious medical condition like high blood pressure is present, especially when the body feels good. However, if God has allowed you the opportunity to see a medical provider who has found a problem that you did not realize existed, God is showing His love through the health care provider's diagnosis and recommendations. God

will always fulfill his promise to you that "I will restore you to health and I will heal you of your wounds" Jer 30:17a.

Hymn for the day- "Open My Eyes That I May See"

"Open my eyes that I may see, glimpses of truth Thou hast for me. Place in my hands the wonderful key, that shall unclasp and set me free" by Clara H. Scott.

My checklist for today

_____ Take my blood pressure medicine
_____ Eat healthy foods
_____ Exercise for at least 10 minutes

Notes

_____
_____
_____
_____

Day 2

You Are In Good Hands

One day a salesman named Chris felt sick so he called his friend Derek who recently got over an illness. Chris told Derek that he had a fever, was weak, felt achy in the body, and had no appetite. Derek said to Chris, "I was feeling the same way when I had a cold. I just took two tablets and I felt better the next day". Chris decided to take two of the same tablets, and in a few hours he got so sick that he needed to be hospitalized. Chris was diagnosed with acute Hepatitis B infection.

Oftentimes when a person gets a diagnosis of a serious health problem like high blood pressure, they go to friends or family members for advice. This sometimes can lead to suggestions that are dangerous and can make things worse. High blood pressure is a condition that 90% of the time there are no known causes for it and that is why **diagnosis and treatment should be made by a qualified health-professional like a physician or nurse practitioner**. God acknowledged in His Word the importance of health care when He said, "those who are well have no need of a physician, but those who are sick" Matt 9:12.

While you may not know the cause for your high blood pressure, there are some things that increase the risk for getting high blood pressure including excessive salt intake, obesity, lack of exercise, tobacco use and drinking alcohol. Even though you might not understand why you have high blood pressure, God assures that He will take care of you, "Many are the afflictions of the righteous, but God delivers him out of them all" Psalm 34:19.

Hymn for the day- "God Will Take Care of You"

"Be not dismayed what-e'er betide, God will take care of you. Beneath His wings of love abide, God will take care of you" *by Civilla D. Martin*

My checklist for today

_____ Take my blood pressure medicine
_____ Cut back on salt
_____ Exercise for at least 10 minutes

Notes

_____
_____
_____
_____ _

Day 3

A Safe Place

In 1992, category five hurricane Andrew hit South Florida and left widespread devastation. People lost their homes, businesses, and even their lives. As a result of that disaster, building codes were established for all new construction to be able to withstand a category five hurricane. Unfortunately, in the years after Andrew, residents have become complacent, and sometimes do not heed the warnings that are always there during hurricane season.

High blood pressure is a condition that may only be realized after a person is hospitalized for a catastrophic event like a stroke, and they end up paralyzed on one side of the body, or have trouble speaking. This usually affects how the person cares for themselves and their family. Sadly however, there are people who only follow the treatment for high blood pressure immediately after a health crisis, but then go back to their usual way of living and eating, including not taking medicines. The reason may be that they feel better and think that they are cured, **and do not accept that high blood pressure is a lifelong diagnosis**.

God's plan for you to be well is made clear when He wrote, "Beloved I pray that in all respects you prosper and be in good health" 3 John:2. Good health suggests a life time of well-being, which you can have by following the health care provider instructions, and trusting in God. When illnesses like high blood pressure come in like a flood, the Lord will raise up a standard against it. Isaiah 59:19.

Hymn of the day: A Shelter in the Time of Storm

"The Lord's our rock in Him we hide, a shelter in the time of storm. Secure whatever ill betide, a shelter in the time of storm" By Vernon J. Charlesworth

My checklist for today

_____ Take my blood pressure medicine
_____ Make an appointment to see my health care provider (if I am due)
_____ Exercise for at least 10 minutes

Notes

_____
_____
_____
_____ _

Day 4

Surrender To God

One day an 18 month old toddler was on a bed playing with a ball. The headboard of the bed had a mirror on it so he could watch himself as he played. The toddler would look in the mirror, see the ball in the mirror, attempt to crawl to touch the ball in the mirror, and bump into the mirror. With a startled look he would pause, and again look at the ball, crawl toward it and bump into the mirror. He repeated the routine a few times and each attempt had the same result. He eventually sat up in the bed and started to do something else. At that moment he realized the ball was beside him, just within his reach.

Sometimes following the treatment for high blood pressure can have some unexpected results. A person might not have any symptoms from the high blood pressure but decide to start taking medicines for it, and then feel like the medicines are making them sick. As a result, they stop taking the blood pressure medicines, and the blood pressure goes up, which can lead to bad outcomes. There are also times that people may choose not to take medicines for blood pressure because they have heard from family members or friends who reported side effects from high blood pressure pills.

These people then end up with stroke or kidney failure from uncontrolled high blood pressure.

Finding the right balance to manage high blood pressure can be accomplished with regular visits with your health care provider, trusting God, and taking charge of your health. Jesus paid the ultimate price to help you to be well, "He was wounded for our transgressions, He was bruised for our iniquities the chastisement of our peace was upon Him, and with His stripes we are healed" Isaiah 53:5.

Hymn of the day: "My Life is in You"

My life is in You Lord; My strength is in You Lord;
My hope is in You Lord, in You, it is in You"
by Daniel Gardner

My checklist for today

_____ Take my blood pressure medicine
_____ Reduce alcohol intake (if you drink)
_____ Exercise for at least 10 minutes

Notes

_____
_____
_____
_____

Day 5

With God, All Things are Possible

As a young adult, I did not have much money and needed to take a class to get a job. The vocational school had different options for the class: 4 hours a day for 9 weeks, 8 hours a day for 9 weeks, and 8 hours a day for 18 weeks. I chose the 4 hours a day for 9 weeks class. The teacher told me "no one has ever completed this course in that time-frame, and it is impossible that you will do it". Knowing that I had no other options, I completed the course in 7 weeks but waited to turn in my work. When I went to turn in my final assignment at 8 weeks, the same teacher said "I am surprised that you did not turn this in sooner, since I thought you were already done".

Sometimes it may seem impossible to keep up with all the requirements to manage your high blood pressure (medications, appointments, healthy eating, cutting out salt, regular exercise, etc…). You may also have some people around you who discourage you from taking care of your blood pressure. However, God reminds us that He is here. "Do not fear, for I am with you. Do not anxiously look about you, for I am God. I will strengthen you, surely I will help you. Surely I will uphold you with my righteous right hand" Isaiah 41:10. Staying

healthy and maintaining good blood pressure may seem like a lot of work, but with simple lifestyle changes and taking medications as prescribed, you can have longevity and vitality. **Believe in the Lord and yourself that you have the key to live a healthy and productive life**, "I can do all things through Christ who strengthens me" Phillip 4:13.

Hymn of the Day: "God Will Make a Way"

"God will make a way where there seems to be no way. He works in ways we cannot see, He will make a way for me" by Don Moen

My checklist for today

_____ Take my blood pressure medicine
_____ Stop tobacco (if you smoke)
_____ Exercise for at least 10 minutes

Notes

_____
_____
_____
_____

Appendix J. Envelope for Posttest

ID # 0001

1. Complete these **TWO** surveys **AFTER** you have read the devotional for **FIVE** days

2. Put the completed surveys back in this envelope

3. Return this envelope to the researcher on the designated day

4. Receive your $10 Walmart gift card after returning this envelope

Appendix K. Posttest Revised Illness Perception Questionnaire

ID #0001

Post-Test
Revised Illness Perception Questionnaire

We are interested in your own personal views of how you now see your high blood pressure. Please indicate how much you agree or disagree with the following statements about your high blood pressure by ticking the appropriate box.

	Views about your high blood pressure	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
IP1	My high blood pressure will last a short time					
IP2	My high blood pressure is likely to be permanent rather than temporary					
IP3	My high blood pressure will last for a long time					
IP4	This high blood pressure will pass quickly					
IP5	I expect to have this high blood pressure for the rest of my life					
IP6	My high blood pressure is a serious condition					
IP7	My high blood pressure has major consequences on my life					
IP8	My high blood pressure does not have much effect on my life					
IP9	My high blood pressure strongly affects the way others see me					
IP10	My high blood pressure has serious financial consequences					
IP11	My high blood pressure causes difficulties for those who are close to me					

1

	Views about your high blood pressure	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
IP12	There is a lot which I can do to control my symptoms					
IP13	What I do can determine whether my high blood pressure gets better or worse					
IP14	The course of my high blood pressure depends on me					
IP15	Nothing I do will affect my high blood pressure					
IP16	I have the power to influence my high blood pressure					
IP17	My actions will have no affect on the outcome of my high blood pressure					
IP18	My high blood pressure will improve in time					
IP19	There is very little that can be done to improve my high blood pressure					
IP20	My treatment will be effective in curing my high blood pressure					
IP21	The negative effects of my high blood pressure can be prevented (avoided) by my treatment					
IP22	My treatment can control my high blood pressure					
IP23	There is nothing which can help my high blood pressure					
IP24	The symptoms of my condition are puzzling to me					
IP25	My high blood pressure is a mystery to me					
IP26	I don't understand my high blood pressure					

	Views about your high blood pressure	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
IP27	My high blood pressure doesn't make any sense to me					
IP28	I have a clear picture or understanding of my high blood pressure					
IP29	The symptoms of my high blood pressure change a great deal from day to day					
IP30	My symptoms come and go in cycles					
IP31	My high blood pressure is very unpredictable					
IP32	I go through cycles in which my high blood pressure gets better and worse					
IP33	I get depressed when I think about my high blood pressure					
IP34	When I think about my high blood pressure I get upset					
IP35	My high blood pressure makes me feel angry					
IP36	My high blood pressure does not worry me					
IP37	Having this high blood pressure makes me feel anxious					
IP38	My high blood pressure makes me feel afraid					

Appendix L. Posttest Check Your High Blood Pressure Prevention IQ

ID # 0001

Post-Test

Check Your High Blood Pressure Prevention IQ

1	There is nothing you can do to prevent high blood pressure.	**TRUE or FALSE**
2	If your mother or father has high blood pressure, you'll get it.	**TRUE or FALSE**
3	Young adults don't get high blood pressure.	**TRUE or FALSE**
4	High blood pressure has no symptoms.	**TRUE or FALSE**
5	Stress causes high blood pressure.	**TRUE or FALSE**
6	High blood pressure is not life-threatening.	**TRUE or FALSE**
7	Blood pressure is high when it's at or over 140/90 mm Hg.	**TRUE or FALSE**
8	If you're overweight, you are two to six times more likely to develop high blood pressure.	**TRUE or FALSE**
9	You have to exercise vigorously every day to improve your blood pressure and heart health.	**TRUE or FALSE**
10	Americans eat two to three times more salt and sodium than they need.	**TRUE or FALSE**
11	Drinking alcohol lowers blood pressure.	**TRUE or FALSE**
12	High blood pressure has no cure.	**TRUE or FALSE**

Prepared by the National Heart, Lung, and Blood Institute, National Institutes of Health

Appendix M. General Scoring Guide for the IPQ-R

Using and Scoring the IPQ-R Subscales

It is advisable to have a good read of the IPQ-R paper before you use the questionnaire. The paper can be downloaded from this website. As outlined in the paper, the questionnaire can be adapted for particular groups. Items relevant to the identity and causes of the illness can readily be inserted into the questionnaire.

The *pdf* English version of the IPQ-R on this website asks the questions in relation to *illness.* Wherever possible, the word illness should be replaced with the name of the particular illness or condition under study e.g. diabetes, chronic fatigue syndrome.

SCORING THE IPQ-R

Please note:

High scores on the identity, timeline, consequences, and cyclical dimensions represent strongly held beliefs about the number of symptoms attributed to the illness, the chronicity of the condition, the negative consequences of the illness, and the cyclical nature of the condition.

High scores on the personal control, treatment control and coherence dimensions, represent positive beliefs about the controllability of the illness and a personal understanding of the condition.

Coding: *for identity scale* yes = 1; no = 0

strongly disagree =1, disagree =2, neither agree or disagree = 3, agree = 4, strongly agree = 5

Reverse score: IP1, IP4, IP8, IP15, IP17, IP18, IP19, IP23, IP24, IP25, IP26, IP27, IP36

1. **Identity:** sum yes-rated symptoms in column 2 (*this symptom is related to my illness*) on p. 1
2. **Timeline (acute/chronic):** sum items IP1 - IP5 + IP18
3. **Consequences:** sum items IP6 - IP11
4. **Personal control:** sum items IP12 - 1P17
5. **Treatment control items:** sum items IP19 – IP23
6. **Illness coherence items:** sum items IP24 – IP28
7. **Timeline cyclical:** sum items IP29 – IP32
8. **Emotional representations:** sum items IP33 – IP38
9. **Causes:**items C1 - C18
   Do not use these as a scale. Start analysis with separate items - used as grouping variables (ie those who do/do not believe in a specific causal factor). With a sufficient sample size (n=85 or more), factor analysis can be used to identify groups of causal beliefs (eg lifestyle ; stress etc) which can then be used as sub-scales (see the following papers for examples*).*

References

Moss-Morris, R., Weinman, J., Petrie, K.J., Horne, R., Cameron, L.D. & Buick, D. (2002). The Revised Illness Perception Questionnaire(IPQ-R). *Psychology and Health*, 17(1), 1-16.

Weinman, J., Petrie, K., Sharpe, N. & Walker, S. (2000). Causal attributions in patients and spouses following a heart attack and subsequent lifestyle changes. British Journal of Health Psychology, 5, 263-273.

SPPSS SYNTAX

This SPSS syntax file can be used to compute the IPQ-R subscales if you have some missing data from participants on select items. On subscales with 6 items we have allowed for a maximum of 2 missing items. For the remainder we have allowed for a maximum of 1 missing item per subscale.

```
RECODE ip1 ip4 ip8 ip15 ip17 ip18 ip19 ip23 ip24 ip25 ip26 ip27 ip36 (1=5) (2=4) (4=2) (5=1).
COMPUTE timeline = 6*MEAN.4(ip1,ip2,ip3,ip4,ip5,ip18).
COMPUTE timecycl = 4*MEAN.3(ip29,ip30,ip31,ip32) .
COMPUTE conseque = 6*MEAN.4(ip6,ip7,ip8,ip9,ip10,ip11).
COMPUTE perscon = 6*MEAN.4(ip12,ip13,ip14,ip15,ip16,ip17) .
COMPUTE treatcon = 5*MEAN.4(ip19,ip20,ip21,ip22,ip23).
COMPUTE illcoher = 5*MEAN.4(ip24,ip25,ip26,ip27,ip28).
COMPUTE emotrepr = 6*MEAN.4(ip33,ip34,ip35,ip36,ip37,ip38).
EXECUTE .
```

Appendix N. Study-specific Scoring Guide for the IPQ-R

Using and Scoring the IPQ-R Subscales

It is advisable to have a good read of the IPQ-R paper before you use the questionnaire. The paper can be downloaded from this website. As outlined in the paper, the questionnaire can be adapted for particular groups. Items relevant to the identity and causes of the illness can readily be inserted into the questionnaire.

The *pdf* English version of the IPQ-R on this website asks the questions in relation to *illness*. Wherever possible, the word illness should be replaced with the name of the particular illness or condition under study e.g. diabetes, chronic fatigue syndrome.

SCORING THE IPQ-R

Please note:

High scores on the identity, timeline, consequences, and cyclical dimensions represent strongly held beliefs about the number of symptoms attributed to the illness, the chronicity of the condition, the negative consequences of the illness, and the cyclical nature of the condition.

High scores on the personal control, treatment control and coherence dimensions, represent positive beliefs about the controllability of the illness and a personal understanding of the condition.

Coding: *for identity scale* yes = 1; no = 0

strongly disagree =1, disagree =2, neither agree or disagree = 3, agree = 4, strongly agree = 5

Reverse score: IP1, IP4, IP8, IP15, IP17, IP18, IP19, IP23, IP24, IP25, IP26, IP27, IP36

1. **Identity:** sum yes-rated symptoms in column 2 (*this symptom is related to my illness*) on p. 1
2. **Timeline (acute/chronic):** sum items IP1 - IP5 + IP18 Reverse 1,4,18
3. **Consequences:** sum items IP6 - IP11 Reverse 8
4. **Personal control:** sum items IP12 - 1P17 Reverse 15, 17
5. **Treatment control items:** sum items IP19 – IP23 Reverse 19, 23
6. **Illness coherence items:** sum items IP24 – IP28
7. **Timeline cyclical:** sum items IP29 – IP32
8. **Emotional representations:** sum items IP33 – IP38
9. **Causes:**items C1 - C18
   Do not use these as a scale. Start analysis with separate items - used as grouping variables (ie those who do/do not believe in a specific causal factor). With a sufficient sample size (n=85 or more), factor analysis can be used to identify groups of causal beliefs (eg lifestyle ; stress etc) which can then be used as sub-scales (see the following papers for examples).

References

Moss-Morris, R., Weinman, J., Petrie, K.J., Horne, R., Cameron, L.D. & Buick, D. (2002). The Revised Illness Perception Questionnaire(IPQ-R). *Psychology and Health*, 17(1), 1-16.

Weinman, J., Petrie, K., Sharpe, N. & Walker, S. (2000). Causal attributions in patients and spouses following a heart attack and subsequent lifestyle changes. British Journal of Health Psychology, 5, 263-273.

SPPSS SYNTAX

This SPSS syntax file can be used to compute the IPQ-R subscales if you have some missing data from participants on select items. On subscales with 6 items we have allowed for a maximum of 2 missing items. For the remainder we have allowed for a maximum of 1 missing item per subscale.

```
RECODE ip1 ip4 ip8 ip15 ip17 ip18 ip19 ip23 ip24 ip25 ip26 ip27 ip36 (1=5) (2=4) (4=2) (5=1).
COMPUTE timeline = 6*MEAN.4(ip1,ip2,ip3,ip4,ip5,ip18).
COMPUTE timecycl = 4*MEAN.3(ip29,ip30,ip31,ip32) .
COMPUTE conseque = 6*MEAN.4(ip6,ip7,ip8,ip9,ip10,ip11).
COMPUTE perscon = 6*MEAN.4(ip12,ip13,ip14,ip15,ip16,ip17) .
COMPUTE treatcon = 5*MEAN.4(ip19,ip20,ip21,ip22,ip23).
COMPUTE illcoher = 5*MEAN.4(ip24,ip25,ip26,ip27,ip28).
COMPUTE emotrepr = 6*MEAN.4(ip33,ip34,ip35,ip36,ip37,ip38).
EXECUTE .
```

REFERENCES

AAAHC. (2017). *Accreditation Association for Ambulatory Health Care, Inc.* Retrieved from About AAAHC: http://www.aaahc.org/

Abbott, L, Gordon Schluck, G., Graven, L., & Martorella, G. (2018). Exploring the intervention effect moderators of a cardiovascular health promotion study among rural African-Americans. *Public Health Nursing*, *35*, 126–134. doi:https://doi.org/10.1111/phn.12377

Abbott, L., Williams, C., & Slate, E. (2018). Promoting heart health among rural African Americans. *Journal of Cardiovascular Nursing, 33*(1), E8-E14. doi:10.1097/JCN.0000000000000410

Alawiyah-MHum, T., Bell, H., Pyles, L., & Runnels, R. C. (2011). Spirituality and faith-based interventions: Pathways to disaster resilience for African American hurricane Katrina survivors. *Journal of Religion & Spirituality in Social Work: Social Thought, 30*(3), 294-319. doi:10.1080/15426432.2011.587388

American Diabetes Association. (2001). *Diabetes 2001 Vital Statistics.* Alexandria: American Diabetes Association.

American Heart Association. (2013). High blood pressure: Statistical fact sheet. 2013 Update. America's Health Rankings: A Call to Action for People and Their Communities. *Medical Benefits, 23*(2), 3.

American Heart Association. (2017a). *Monitoring your blood pressure at home.* Retrieved from https://www.heart.org/en/health-topics/high-blood-pressure/understanding-blood-pressure-readings/monitoring-your-blood-pressure-at-home

American Heart Association. (2017b). *Cardiovascular disease: A costly burden for America - Projections through 2035.* Washington, DC: American Heart Association. doi:1/17DS11775

Ammerman, A., Corbie-Smith, G., St. George, D. M., Washington, C., Weathers, B., & Jackson-Christian, B. (2003). Research expectations among African American church leaders in the PRAISE! Project: A randomized trial guided by Community-Based Participatory Research. *American Journal Public Health, 93*(10), 1720–1727.

Amponsah, W. A., Tabi, M. M., & Gibbison, G. A. (2015). Health disparities in cardiovascular disease and high blood pressure among adults in rural underserved communities. *Online Journal of Rural Nursing and Health Care, 15*(1). doi:10.14574/ojrnhc.v15i1.351

Appel, L. J., Champagne, C. M., Harsha, D. W., Cooper, L. S., Obarzanek, E, . . . Young, D. R. (2003). Writing group of the PREMIER Collaborative Research Group. Effects of comprehensive lifestyle modification on blood pressure control: Main results of the PREMIER clinical trial. *JAMA, 289,* 2083–2093. doi:10.1001/jama.289.16.2083

Archibald, C. M., & Newman, D. (2015). Pilot testing HIV prevention in an Afro Caribbean faith-based community. *The ABNF Journal, 26*(2), 43-49.

Archibald, C., & Rhodd, R. (2013). A measure of acculturation for Afro-Caribbean youth. *The ABNF Journal, 24*(2), 42-46.

Avent, J. R., & Cashwell, C. S. (2015). The black church: Theology and implications for counseling African Americans. *Professional Counselor: Research & Practice, 5*(1), 81-90. doi:10.15241/jra.5.1.81

Aycock, D. M., Kirkendoll, K. D., & Gordon, P. M. (2013). Hypertension education and screening in African American churches. *Journal of Community Health Nursing, 30*(1), 16-27. doi:10.1080/07370016.2013.750197

Bangurah, S. S., Vardaman, S. A., & Cleveland, K. K. (2017). Hypertension in the faith community: A four-week, nurse led, diet/exercise intervention. *Journal of Christian Nursing, 34*(4), 225–231. doi:10.1097/CNJ.0000000000000420

Bates, M. J. (2005). Information and knowledge: An evolutionary framework for information science. *Information Research, 10*(4). Retrieved from http://www.informationr.net/ir/10-4/paper239.html

Bergner, M., Bobbitt, R. A., Carter, W. B., & Gilson, B. S. (1981). The sickness impact profile: Validation of a health status measure. *Medical Care, 19*, 787–805.

Berkley Patton, J., Bowe Thompson, C., Bradley Ewing, A., Berman, M., Bauer, A., Catley, D., . . . Aduloju-Ajijola, N. (2018). Identifying health conditions, priorities, and relevant multilevel health promotion intervention strategies in

African American churches: A faith community health needs assessment. *Evaluation and Program Planning, 67,* 19-28. doi:10.1016/j.evalprogplan.2017.10.012

Berkley-Patton, J., Bowe-Thompson, C., Bradley-Ewing, A., Hawes, S., Moore, E., Williams, E., . . . K, G. (2010). Taking it to the Pews: A CBPR-guided HIV awareness and screening project with Black churches. *AIDS Education and Prevention, 22*(3), 218-237.

Berrenberg, J. (1991). The Cancer Attitude Inventory: Development and validation. *Journal of Psychosocial Oncology, 9,* 35-44.

Boltri, J. M., Davis-Smith, Y. M., Seale, J. P., Shellenberger, S., & Okosun, I. S. (2008). Diabetes Prevention in a Faith-Based Setting: Results of Translational Research. *Journal of Public Health Management Practice, 14*(1), 29-32.

Brewer, L. C., Balls-Berry, J. E., Dean, P., Lackore, K., Jenkins, S., & Hayes, S. N. (2017). Fostering African-American improvement in total health (FAITH!): An application of the American Heart Association's life's simple 7™ among Midwestern African-Americans. *Journal of Racial and Ethnic Health Disparities, 4*(2), 269–281 .

Broadbent, E., Petrie, K., Main, J., & Weinman, J. (2006). The Brief Illness Perception Questionnaire. *Journal of Psychosomatic Research, 60*(6), 631-637. doi:10.1016/j.jpsychores.2005.10.020

Busen, N. H., & Kouzekanani, K. (2000). Perspectives in adolescent risk taking through instrument development. *Journal of Professional Nursing, 16*(6), 345-353.

Buta, B., Brewer, L., Hamlin, D. L., Palmer, M. W., Bowie, J., & Gielen, A. (2011). An innovative faith-based healthy eating program: From class assignment to real-world application of PRECEDE/PROCEED. *Health Promotion Practice, 12*(6), 867-875. doi:10.1177/1524839910370424

Butler-Ajibade, P., Booth, W., & Burwell, C. (2012). Partnering with the Black church: Recipe for promoting heart health in the stroke belt. *ABNF Journal, 23*(2), 34-37.

Carey, M. P., Morrison-Breedy, D., & Johnson, B. T. (1997). The HIV knowledge questionnaire. *AIDS & Behavior, 1*(1), 61-74.

Carper, B. A. (1978). Fundamental patterns of knowing in nursing. *Advances in Nursing Science, 1*(1), 13-23.

Carver, M. C., & Jessie, A. T. (2011). Patient-centered care in a medical home . *The Online Journal of Issues in Nursing, 16*(2).

Center for Disease Control and Prevention. (2014). *African Americans heart disease and stroke fact sheet*. Retrieved May 20, 2018, from Division of Heart Disease and Stroke Prevention: http://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_aa.htm

Center for Disease Control and Prevention. (2018, September 8). *About chronic disease* . Retrieved September 19, 2018, from National Center for Chronic Disease

Prevention and Health Promotion (NCCDPHP): http://www.cdc.gov/chronicdisease/about/index.htm

Ceta, A., Knapp, B., Gustafson, T., Hudberg, J. R., & Markham, J. (Eds.). (2014). *Our daily bread: For personal and family devotions* (Vol. 59). Grand Rapids, MI: RBC Ministries.

Chalder, T., Berelowitz, G., Pawlikowska, T., Watts, L., Wessely, S., Wright, D., & Wallace, E. P. (1993). Development of a fatigue scale. *Journal of Psychosomatic Research, 37*, 147–153.

Chandler, D. J. (2017). African Amercan spirituality: Through another lens. *Journal Of Spiritual Formation & Soul Care, 10*(2), 159-181.

Chou, F. Y., Holzemer, W. L., Portillo, C. J., & Slaughter, R. (2004). Self-care strategies and sources of information for HIV/AIDS symptom management. *Nursing Research, 53*, 332–339.

Christie, C., Watkins, J., Weerts, S., Jackson, H. D., & Brady, C. (2010). Community church-based intervention reduces obesity indicators in African American females. *The Internet Journal of Nutrition and Wellness, 9*(2), 1-11.

Clark, N. M., & Becker, M. H. (1998). Theoretical models and strategies for improving adherence and disease management. In S. Shumaker, E. Schron, J. Ockene, & W. McBee (Eds.), *The handbook of health behavior change.* New York: Springer Publishing Company.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Colon-Otero, G., Albertie, M., Lesperance, M., Weis, J. A., Coles, A., Smith, N., . . . Rajkumar, S. V. (2012). A pilot program in collaboration with African American churches successfully increases awareness of the importance of cancer research and participation in cancer translational research studies among African Americans. *Journal of Cancer Education, 27*(2), 294-298.

Cone, J. H. (1970). *A Black theology of liberation.* Philadelphia: Lippincott Company.

Corbie-Smith, G., Goldmon, M., Isler, M. R., Washington, C., Ammerman, A., Green, M., & Bunton, A. (2010). Partnerships in Health Disparities Research and the Roles of Pastors of Black Churches: Potential Conflict, Synergy, and Expectations. *Journal of the National Medical Association, 102*(9), 823-831.

Coutu, M. F., Dupuis, G., D'Antonio, B., & Rochon-Goyer, L. (2003). Illness representation and change in dietary habits in hypercholesterolemic patients. *Journal of Behavioral Medicine, 26*(2), 133-152.

Diabetes Prevention Program (DPP) Research Group. (2002). The Diabetes Prevention Program (DPP): Description of lifestyle intervention. *Diabetes Care, 25*, 2165–2171.

Dickinson, H. O., Mason, J. M., Nicolson, D. J., Campbell, F., Beyer, F. R., Cook, J. V., . . . Ford, G. A. (2006). Lifestyle interventions to reduce raised blood pressure: A

systematic review of randomized controlled trials. *Journal of Hypertension, 24*, 215–233. doi:10.1097/01.hjh.0000199800.72563.26

Drake, B. F., Shelton, R. C., Gilligan, T., & Allen, J. D. (2010). A Church-Based intervention to promote informed decision making for prostate cancer screening among African American men. *Journal of the National Medical Association, 102*(3), 164-171.

Duggan, M., & Brenner, J. (2013). *The demographics of social media users, 2012* (Vol. 14). Washington, DC: Pew Research Center's Internet & American Life Project.

Dyess, S. M. (2011). Faith: A concept analysis. *Journal of Advanced Nursing, 67*(12), 2723-2731.

Dyess, S., & Chase, S. K. (2010). Caring for adults living with a chronic illness through communities of faith . *International Journal For Human Caring, 14*(4), 38-44.

Edwards, K. (2014). Health disparities: What can we do? *Journal Of Cultural Diversity, 21*(1), 3.

Fallon, E. A., Bopp, M., & Webb, B. (2013). Factors associated with faith-based health counselling in the United States: implications for dissemination of evidence-based behavioural medicine. *Health & Social Care In The Community, 21*(2), 129-139. doi:10.1111/hsc.12001

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods, 41*(4), 1149-1160. doi:10.3758/BRM.41.4.1149

Fishbein, M., & Ajzen, I. (2010). *Predicting and changing behavior: The reasoned action approach.* New York, NY: Psychological Press.

Flaherty, J. A., Gaviria, M. ,., & Pathak, D. S. (1983). The measurement of social support: the Social Support Network Inventory. *Comprehensive Psychiatry, 24*, 521-8.

Fox, S. (2011). Profiles of health information seekers. *Pew Research Center*. Retrieved March 16, 2018, from http://www.pewinternet.org/2011/02/01/profiles-of-health-information-seekers/

Frank, D., & Grubbs, L. (2008). A faith-based screening/education program for diabetes, cvd and stroke in rural African Americans. *The ABNF Journal, 19*(3), 96-101.

Franklin, M. D., Schlundt, D. G., McClellan, L. H., Kinebrew, T., Sheats, J., Belue, R., . . . Hargreaves, M. (2007). Religious fatalism and its association with health behaviors and outcomes. *American Journal Of Health Behavior, 36*(1), 563-572.

Fuchs, F. D. (2011). Why do Black Americans have higher prevalence of hypertension? : An enigma still unsovled. *Hypertension, 57,* 379-380. doi:10.1161/HYPERTENSIONAHA.110.163196

Giblin, P. (1991). Effective utilization and evaluation of indigenous health care workers. *Public Health Reports, 104,* 361–368.

Gillespie, C. D., & Hurvitz, K. A. (2013). Prevalence of hypertension and controlled hypertension - United States, 2007-2010. *MMWR, 62*(3), 144-148.

Google. (2013). *Blood pressure check*. Retrieved 2013, from Google Images: https://www.google.com/search?q=blood+pressure+check

Greer, D. B. (2011, May). Improving adherence in African American women with uncontrolled primary hypertension (Doctoral dissertation). ProQuest LLC.

Grigoryan, L., Pavlik, V. N., & Hyman, D. J. (2012). Predictors of antihypertensive medication adherence in two urban health-care systems. *American Journal of Hypertension, 25*(7), 735-738.

Harada, N., Chiu, V., King, A., & Stewart, A. (2001). An evaluation of three self-report PA instruments for older adults. *Medicine and Science in Sports and Exercise, 33*, 962–970.

Hauser, S., Dawson, D., Lehrich, J., Beal, M., Kevy, S., Mills, J., & Weiner, H. (1983). Intensive immunosuppression in progressive multiple sclerosis: A randomised, three-arm study of high-dose intravenous cyclophosphamide, plasma exchange and ACTH. *The New England Journal of Medicine, 308*, 173–180.

HealthyPeople.gov. (2018). Retrieved 2018, from Healthy People.gov: https://www.healthypeople.gov/2020/topics-objectives

Holmes, W. C., & Shea, J. A. (1999). Two approaches to measuring quality of life in the HIV/AIDS population: HAT-QoL and MOS-HIV. *Quality of Life Research, 8*(6), 515–527.

Holt, C. L., & McClure, S. M. (2006). Perceptions of the religion-health connection among African American church members. *Qualitative Health Research, 16,* 268-281.

Holt, C. L., Lee, C., & Wright, K. (2008). A spiritually based approach to breast cancer awareness: Cognitive response analysis of communication effectiveness. *Health Communication, 23*(1), 13-22.

IBM. (2017). Statistical Package for Social Sciences. *SPSS 24, for Windows*.

Israel, B. A. (1985). Social networks and social support: Implications for natural helper and community level interventions. *Health Education Quarterly, 12,* 311–351.

Johnson, K. S., Elbert-Avila, K. I., & Tulsky, J. A. (2005). The influence of spiritual beliefs and practices on the treatment preferences of African Americans: A review of the literature. *Journal of American Geriatric Society, 53*(4), 711–719.

Jolly, K., Archibald, C., & Liehr, P. (2013). Risk taking in first and second generation Afro-Caribbean adolescents: An emerging challenge for school nurses. *The Journal of School Nursing, 29*(5), 353 - 360. doi:10.1177/1059840513475819

Jones, L. M., Rosemberg, M. S., & Wright, K. D. (2017). Opportunities for the advanced practice nurse to enhance hypertension knowledge and self-management among African American women. *Clinical Nurse Specialist, 31*(6), 311–318. doi:10.1097/NUR.0000000000000331

Kim, K. H., Linnan, L., Campbell, M. K., Brooks, C., Koenig, H. G., & Wiesen, C. (2008). The WORD (Wholeness, Oneness, Righteousness, Deliverance): A faith-

based weight-loss program utilizing a community-based participatory research approach. *Health Education & Behavior, 35*(5), 634-650. doi:10.1177/1090198106291985

Kinley, J. D., Lowry, H., Katz, C., Jacobi, F., Jassal, D. S., & Sareen, J. (2015). Depression and anxiety disorders and the link to physician diagnosed cardiac disease and metabolic risk factors. *General Hospital Psychiatry, 37,* 288-293. Retrieved from http://www.ghpjournal.com

Kramish-Campbell, M., James, A., Hudson, M. A., Carr, C., Jackson, E., Oates, V., . . . Tessaro, I. (2004). Improving multiple behaviors for colorectal cancer prevention among African American church members. *Health Psychology, 23*(5), 492–502.

Kronish, I. M., Carson, A. P., Davidson, K. W., Muntner, P., & Safford, M. M. (2012). Depressive symptoms and cardiovascular health by the American Heart Association's definition in the reasons for geographic and racial differences in stroke (REGARDS) study. *PLoS ONE, 7*(12), e52771. doi:10.1371/journal.pone.0052771

Kumar, A., & Lim, H. (2008). Age differences in mobile service perceptions: Comparison of Generation Y and baby boomers. *Journal of Services Marketing, 22*(7), 568-577.

Kung, H. C., & Xu, J. (2015). *Hypertension-related Mortality in the United States, 2000–2013.* Retrieved from NCHS Data Brief: https://www.cdc.gov/nchs/data/databriefs/db193.htm

La Greca, A. M. (1992). *Brief Manual for the Self Care Inventory.* Miami, FL: Author.

Leininger, M. (1991). *Culture care diversity and universality: A theory of nursing.* New York: National League of Nursing Press.

Leininger, M. (1995). *Transcultural nursing: Concepts, theories, research, and practice.* Columbus, OH: MaGraw Hill College Custom Series.

Leininger, M. M., & McFarland, M. R. (2010). Madeline Leininger's theory of culture care diversity and universality . In M. E. Parker, Smith, & M. C (Eds.), *Nursing theories and nursing practice* (3rd ed., pp. 317-336).

Leventhal, H., Benyamini, Y., Brownlee, S., Diefenbach, M., Leventhal, E., Patrick-Miller, L., & Robitaille, C. (1997). Illness representations: Theoretical foundations. In K. Petrie, & J. Weinman (Eds.), *Perceptions of health and illness* (pp. 19–46). Amsterdam: Harwood Academic.

Leventhal, H., Diefenbach, M., & Leventhal, E. (1992). Illness cognition: Using common-sense to understand treatment adherence and affect-cognition interactions. *Cognitive Therapy and Research, 16*(2), 143–163.

Leventhal, H., Meyer, D., & Nerenz, D. (1980). The common-sense representation of illness danger. In S. Rachman (Ed.), *Contributions to medical psychology* (Vol. 2, pp. 7-30). New York: Pergamon Press.

Lewis, L. M. (2012). Factors associated with medication adherence in hypertensive Blacks: A literature review. *Journal of Cardiovascular Nursing, 27*(3), 208-219.

Lewis, T. T., Everson-Rose, S. A., Colvin, A., Matthews, K., Bromberger, J. T., & Sutton-Tyrrell, K. (2009). Interactive effects of race and depressive symptoms on calcification in African American and White women. *Psychosomatic Medicine, 71*, 163-170. doi:0033-3174/09/7102-0163

Lloyd-Jones, D., Adams, R. J., & Brown, T. M. (2010). Heart disease and stroke statistics—2010 update: A report from the American Heart Association statistics committee and stroke statistics subcommittee. *Circulation, 121*, e1-e170.

Lowe, J., & Archibald, C. (2009). Cultural diversity: The intention of nursing. *Nursing Forum, 44*(1), 11-18.

Lowe, R., & Norman, P. (2017). Information processing in illness representation: Implications from an Associative-Learning framework. *Health Psychology, 36*(3), 280–290. doi:10.1037/hea0000457

Lynn, B., Yoo, G. J., & Levine, E. G. (2014). ‘‘Trust in the Lord’’: Religious and spiritual practices of African American breast cancer survivors. *Journal of Religious Health, 53,* 1706–1716. doi:10.1007/s10943-013-9750-x

Marcus, M. T., Walker, T., Swint, J. M., Page-Smith, B., Brown, C., Busen, N., . . . Williams D, V. S. (2004). Community-based participatory research to prevent substance abuse and HIV/AIDS in African-American adolescents. *Journal of Interprofessional Care, 18*(4), 347-359.

Marion, L., Douglas, M., Lavin, M., Barr, N., Gazaway, S., Thomas, L., & Bickford, C. (2016). Implementing the new ANA standard 8: Culturally congruent practice. *The Online Journal of Issues in Nursing, 22*(1).

Marshall, J. S. (2015). Effect of a spiritually-guided intervention on breat self-care attitudes in Afro-Caribbean women. *Published Dissertation*. Retrieved from Proquest.

Marshall, J. S., & Archibald, C. M. (2016). Breast health attitudes in Afro-Caribbean women. *The ABNF Journal, 27*(4), 88-91.

Marshall, J., & Archibald, C. (2015). The influence of spirituality on health behaviors in an Afro-Caribbean population. *The ABNF Journal, 26*(3), 57-62.

Masci, D., Mohamed, B., & Smith, G. A. (2018). *Black Americans are more likely than overall public to be Christian, Protestant.* Retrieved from Pew Research Center: http://www.pewresearch.org/fact-tank/2018/04/23/black-americans-are-more-likely-than-overallpublic-

MATLAB. (2013). Natick, MA: The MathWorks, Inc.

McClendon, A. (2012). Defining the role of the Bible in spirituality: "Three degrees of spirituality" in American culture. *Journal of Spiritual Formation and Soul Care, 5*(2), 207-225.

McGrady, M. E., Peugh, J. L., & Hood, K. K. (2014). Illness representations predict adherence in adolescents and young adults with type 1 diabetes. *Psychology & Health, 29*(9), 985-998. doi:10.1080/08870446.2014.899361

Mellowes, M. (2010). *The Black Church*. Retrieved June 10, 2013, from God in America: http://www.pbs.org/godinamerica/black-church/

Miller, K., Forehand, R., & Kotchick, B. (1998). Adolescent sexual behavior in two ethnic minority samples: The role of family variables. *Journal of Marriage and Family, 61*, 85-98.

Moore, C. (2017). Policies that restrict full utilization of nurse practitioners in primary care. *Nursing Economic$, 35*(2), 70-99.

Morgan, G. A., Griego, O. V., & Gloeckner, G. (2000). *SPSS for Windows : An Introduction to Use and Interpretation in Research.* Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Moss-Morris, R., Weinman, J., Petrie, K. J., Horne, R., Cameron, L. D., & Buick, D. (2002). The Revised Illness Perception Questionnaire (IPQ-R). *Psychology and Health, 17*, 1-16.

Mozaffarian, D., Benjamin, E. J., Go, A. S., Arnett, D. K., Blaha, M. J., Cushman, M., . . . Jiménez, M. C. (2016). Heart disease and stroke statistics – 2016 update: a report from the American Heart Association. *Circulation, 132*, e1-e324. Retrieved from http://dx.doi.org/10.1161/CIR.0000000000000350

Munro, B. (2005). *Statistical methods for health care research* (5th ed.). Philadelphia: Lippincott.

National Center for Health Statistics. (2017). *National Health and Nutrition Examination Survey.* Retrieved from NCHS Fact Sheet: https://www.cdc.gov/nchs/data/factsheets/factsheet_nhanes.htm

National Heart Lung and Blood Institute. (1994). Check Your High Blood Pressure Prevention IQ. *National Institutes of Health*, NIH Publication Number 94-3671.

Nguyen, A. W., Taylor, R. J., & Chatters, L. M. (2016). Church-based social support among Caribbean Blacks in the United States. *Review of Religious Research, 58*(3), 385–406. doi:10.1007/s13644-016-0253-6

Nwankwo, T., Yoon, S. S., Burt, V., & Gu, Q. (2013). *Hypertension among adults in the United States: National Health and Nutrition Examination Survey, 2011–2012. NCHS data brief, no 133.* Hyattsville, MD: National Center for Health Statistics.

Ogedegbe, G. O., Boutin-Foster, C., Wells, M. T., Allegrante, J. P., Isen, A. M., Jobe, J. B., & Charlson, M. E. (2012). A randomized controlled trial of positive-affect intervention and medication adherence in hypertensive African Americans. *Archives of Internal Medicine, 172*(4), 322-326.

Oliveria, S. A., Chen, R. S., McCarthy, B. D., Davis, C. C., & Hill, M. N. (2005). Hypertension knowledge, awareness, and attitudes in a hypertensive population. *Journal of General Internal Medicine, 20*(3), 219–225. doi:10.1111/j.1525-1497.2005.30353.x

Our Daily Bread Ministries. (2018). *Our Daily Bread Who We Are*. Retrieved from Our Daily Bread: https://odb.org/who-we-are

Patterson, B. (2014). Growing in love and wisdom: Tibetan Buddhist sources for Christian meditations. *Buddhist-Christian Studies, 34,* 215–218.

Peterson, J. A., & Cheng, A. L. (2011). Heart and Soul Physical Activity Program for African American Women. *Western Journal of Nursing Research, 33*(5), 652–670. doi:10.1177/0193945910383706

Petrie, K., Perry, K., Broadbent, E., & Weinman, J. (2012). A text message programme designed to modify patients' illness and treatment beliefs improves self-reported adherence to asthma preventer medication. *British Journal of Health Psychology, 17*(1), 74-84. doi:doi:10.1111/j.2044-8287.2011.02033.x

Polit, D. F., & Beck, C. T. (2018). *Essentials of Nursing Research* (9th ed.). Philadelphia: Wolters Kluwer.

Powers, M. J., & Jalowiec, A. (1900). *Identification of Variables that Characterize Hypertensives.* Rockville, MD: Division of Nursing/Bureau of Health Professions.

Prado Jr, J. C., & Mion Jr, D. (2010). Adherence to medication: The importance of research in primary care. *American Journal of Hypertension, 23*(2), 149. doi:10.1038/ajh.2009.205

Prochaska, J. O., Redding, C. A., & Evers, K. E. (2003). The Transtheoretical Model and stages of change. In F. M. Lewis (Ed.), *Health behavior and health education: Theory, research and practice* (pp. 99-120). San Francisco: Jossey-Bass.

Prochaska, J., Redding, C., & Evers, K. (2008). The Transtheoretical Model and stages of change. In K. Glanz, B. Rimer, & K. Viswanath (Eds.), *Health behavior and*

health education: Theory, research, and practice (4th ed., pp. 97–122). San Francisco, CA: Jossey-Bass.

Ralston, P., Lemacks, J., Wickrama, K., Young-Clark, I., Coccia, C., Ilich, J., . . . O'Neal, C. W. (2014). Reducing cardiovascular disease risk in mid-life and older African Americans: A church-based longitudinal intervention project at baseline. *Contemporary Clinical Trials, 38*(1), 69–81. doi:10.1016/j.cct.2014.03.003

Remmell, P. S., & Benfari, R. C. (1980). Assessing dietary adherence in the Multiple Risk Factor Intervention Trial (MRFIT). *Journal of American Dietetic Association, 76*, 357–360.

Resnicow, K., Jackson, A., Blissett, D., Wang, T., McCarty, F., Rahotep, S., & Periasamy, S. (2005). Results of the Healthy Body Healthy Spirit Trial. *Health Psychology, 24*(4), 339–348.

Resource Center for Adolescent Pregnancy Prevention. (2018). *Theories and approaches: Health Belief Model (HBM).* Retrieved December 3, 2018, from ETR: Advancing Health Equity: http://recapp.etr.org/recapp/index.cfm?fuseaction=pages.theoriesdetail&PageID=13

Reynolds, N. R., Sanzero-Eller, L. ,., Corless, I. B., Kirksey, K., Hamilton, M. J., Kemppainen, J. K., . . . Holzemer, W. L. (2009). HIV illness representation as a predictor of self-care management and health outcomes: A multi-site cross-cultural study. *AIDS Behavior, 13*, 258–267. doi:10.1007/s10461-007-9297-5

Roach, M. S. (1984). *Caring: The Human Mode of Being. Implications for Nursing.* Ottawa: The Canadian Hospital Association Press. Retrieved from IBSN 0-7727-3740-1

Rochon-Goyer, L., & Dupuis, G. (1992). Cognitive representation of hypercholesterolemia: Poster presentation. *Society of Behavioral Medicine*.

Rosenstock, I. (1990). The Health Belief Model: Explaining health behavior through expectancies. In K. Glanz, F. Lewis, & B. Rimer (Eds.), *Health Behavior and Education* (pp. 39-63). San Francisco: Jossey-Bass Publishers.

Rowland, M. L., & Isaac-Savage, E. P. (2014). The black church: Promoting health, fighting disparities. *New Directions For Adult & Continuing Education*, *142*, 15-24. doi:10.1002/ace.20091

Roy, C., & Andrews, H. (1999). *The Roy adaptation model* (2nd ed.). Stamford: Appleton & Lange.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68-78.

Schoenthaler, A. M., Lancaster, K. J., Chaplin, W., Butler, M., Forsyth, J., & Ogedegbe, G. (2018). Cluster randomized clinical trial of FAITH (Faith-Based Approaches in the Treatment of Hypertension) in Blacks. *Circulation: Cardiovascular Quality and Outcomes, 11*(10), 1-10. doi:10.1161/CIRCOUTCOMES.118.004691

Scollan-Koliopoulos, M. (2004). Theory-guided intervention for preventing diabetes-related amputations in African Americans. *Journal of Vascular Nursing, 22*(4), 126-133.

Scott, J., Spees, C. K., Taylor, C. A., & Wexler, R. (2010). Racial differences in barriers to blood pressure control in a family practice setting. *Journal of Primary Care & Community Health, 1*(3), 200– 205.

Sealea, J. P., Fifieldb, J., Davis-Smitha, Y. M., Satterfielda, R., Goens-Thomasa, J., Colea, B., . . . Boltri, J. M. (2013). Developing culturally congruent weight maintenance programs for African American church members. *Ethnicity & Health, 18*(2), 152-167. Retrieved from http://dx.doi.org/10.1080/13557858.2012.708914

Shah, B. R., Thomas, K. L., Elliot-Bynum, S., Thomas, K., Damon, K., Allen-LaPointe, N., . . . Peterson, E. D. (2013). Check it, change it: A community-based intervention to improve blood pressure control. *Circulation: Cardiovascular Qualitative Outcomes, 6*(6), 741–748. doi:10.1161/circoutcomes.113.000148

Shrum, J., Turner, N., & Bruce, K. (1989). Developement of an instrument to measure attitude towards AIDS. *AIDS Education, 2*, 220-234.

Skinner, T. C., Howells, L., Greene, S., Edgar, K., McEvilly, A., & Johansson, A. (2003). Development, reliability and validity of the diabetes illness representations questionnaire: Four studies with adolescents. *Diabetic Medicine, 20*, 283–289. doi:10.1046/j.1464-5491.2003.00923.x

Skolarus, L. E., Cowdery, J., Dome, M., Bailey, S., Baek, J, . . . Brown, D. L. (2018). Reach out churches: A community-based participatory research pilot trial to assess the feasibility of a mobile health technology intervention to reduce blood pressure among African Americans. *Health Promotion Practice, 19*(4), 495-505. doi:10.1177/1524839917710893

Smith, E. D., Merritt, S. L., & Patel, M. K. (1997). Church-based education: An outreach program for African Americans with hypertension. *Ethnnicity & Health, 2*(3), 243-253.

Smith, T. M., Tucker, C. M., Arthur, T. M., Wippold, G. M., & Tran, S. (2017). Frequency of visits to a health care provider, health promoting behaviors, and perceived health status among African American women. *Women & Health, 57*(5), 583-598. doi:10.1080/03630242.2016.1178683

Stallings, D. T. (2016). Illness perceptions and health behaviors of Black women. *Journal of Cardiovascular Nursing, 31*(6), 492-499. doi:10.1097/JCN.0000000000000276

Stewart, A., Mills, K., King, A., Haskell, W., Gillis, D., & Ritter, P. (2001). CHAMPS PA questionnaire for older adults: Outcome for interventions. *Medicine & Science in Sports & Exercise, 33*, 1126–1141.

Tappen, R. (2011). *Advanced nursing research: From theory to practice.* Sudbury, MA: Jones & Bartlett.

Tettey, N., Duran, P. A., Andersen, H. S., & Boutin-Foster, C. (2017). Evaluation of HeartSmarts, a faith-based cardiovascular health education program. *Journal of Religious Health, 56,* 320–328. doi:10.1007/s10943-016-0309-5

Tettey, N., Duran, P. A., Andersen, H. S., Washington, N., & Boutin-Foster, C. (2016). "It's like backing up science with scripture": Perceptions of HeartSmarts, a faith-based cardiovascular health education program. *Journal of Religious Health, 55,* 1078–1088. doi:10.1007/s10943-016-0196-9

The Joint Commission. (2010). The Joint Commission: Advancing effective communication, cultural competence, and patient- and family-centered care: A roadmap for hospitals. Oakbrook Terrace, IL: The Joint Commission.

Thompson, F. E., Kipnis, V., Subar, A. F., Krebs-Smith, S. M., Kahle, L. L., Midthune, D., & al, e. (2000). Evaluation of 2 brief instruments and a food frequency questionnaire to estimate daily number of servings of fruit and vegetables. *American Journal of Clinical Nutrition, 71*, 1503–1510.

Thompson, F. E., Subar, A. F., Smith, A. F., Midthune, D., Radimer, K. L., Kahle, L. L., & V, K. (2002). Fruit and vegetable assessment: Performance of 2 new short instruments and a food frequency questionnaire. *Journal of American Dietetic Association, 102*(12), 1764-1772.

Topolski, T. D., LoGerfo, J., Patrick, D. L., Williams, B., Walwick, J., & Patrick, M. B. (2006). The Rapid Assessment of Physical Activity (RAPA) among older adults. *Prevention of Chronic Diseases , 3*(4), A118.

Tucker, K. L., Maras, J., Champagne, C., Connell, C., Goolsby, S., Weber, J., & al, e. (2005). A regional food-frequency questionnaire for the US Mississippi Delta. *Public Health and Nutrition , 8*(1), 87–96.

Turner, L. W., Sutherland, M., Harris, G. J., & Barber, M. (1995). Cardiovascular health promotion in north Florida African-American churches. *The Journal of Health Behavior, Education & Promotion, 19*(2), 3-9.

Turrise, S. (2016). Illness representations, treatment beliefs, medication adherence, and 30-day hospital readmission in adults with chronic heart failure: A prospective correlational study. *Journal of Cardiovascular Nursing, 31*(3), 245-254.

Tussing-Humphreys, L., Thomson, J., Mayo, T., & Edmond, E. (2013). A church-based diet and physical activity intervention for rural, lower Mississippi delta African American adults: Delta body and soul effectiveness study, 2010–2011. *Preventing Chronic Disease, 10*, 1-11.

U.S. Department of Health and Human Services. (2007). *Your Guide to Lowering Your Blood Pressure with DASH: DASH Eating Plan.* National Institute of Health.

U.S. Department of Health and Human Services. (2013, September 18). *DATA2020 Search Results.* Retrieved February 13, 2014, from Healthy People 2020: http://www.healthypeople.gov/2020/data/SearchResult.aspx

United States Census Bureau. (2018). *Race about*. Retrieved March 11, 2018, from https://www.census.gov/topics/population/race/about.html

Vrijens, B., DeGeest, S., & Hughes, D. (2012). A new taxonomy for describing and defining adherence to medications. *British Journal of Pharmacology, 73*(5), 691-705.

Watson, D., Clark, L., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS Scales. *Journal of Personality and Social Psychology, 54*, 1063–1070.

Weinman, J., Petrie, K. J., Moss-Morris, R., & Horne, R. (1996). The Illness Perception Questionnaire: A new method for assessing illness perceptions. *Psychology and Health, 11*, 431-446.

Weinrich, S., Holdford, D., Boyd, M., Creanga, D., Cover, K., Johnson, A., & Weinrich, M. (1998). Prostate cancer education in African American churches. *Public Health Nursing, 15*(3), 188-195.

White, H. L. (2018). Promoting self-management of hypertension in the African-American church. *Journal of National Black Nurses' Association*, *29*(1), 6-12.

Whitt-Glover, M. C., Goldmon, M. V., Gizlice, Z., Heil, D. P., & Karanja, N. (2017). Learning and Developing Individual Exercise Skills (L.A.D.I.E.S.) for a better life: A church-based physical activity intervention – baseline participant characteristics. *Ethnicity & Disease*, *27*(3), 257–264. doi:10.18865/ed.27.3.257

Whitt-Glover, M. C., Goldmon, M. V., Karanja, N., Heil, D. P., & Gizlice, Z. (2012). Learning and Developing Individual Exercise Skills (L.A.D.I.E.S.) for a Better

Life: A physical activity intervention for Black women. *Contemporary Clinical Trials, 33,* 1159–1171.

Williams, L. B., Franklin, B., Evans, M. B., Jackson, C., Hill, A., & Minor, M. (2015). Turn the beat around: A stroke prevention program for African-American churches. *Public Health Nursing, 33.* (1), 11–20. doi:10.1111/phn.12234

Williamson, W., & Kautz, D. D. (2009). Let's get moving: Let's get praising: Promoting health and hope in an African American church. *The ABNF Journal, 20*(4), 102-105.

Wingood, G. M., Robinson, L. R., Braxton, N. D., Er, D. L., Conner, A. C., Renfro, T. L., & DiClemente, R. J. (2013). Comparative effectiveness of a faith-based HIV intervention for African American women: Importance of enhancing religious social capital. *American Journal Of Public Health, 103*(12), 2226-2233. doi:10.2105/AJPH.2012.301386

World Health Organization. (2018). *Health Topics: Nursing*. Retrieved April 4, 2018, from World Health Organization: http://www.who.int/topics/nursing/en/

Wosh, P. J. (2017). The bible in American life. *Church History, 86*(3), 958-960. doi:10.1017/S0009640717002025

Yanek, L. R., Becker, D. M., Moy, T. F., Gittelsohn, J., & Koffman, D. M. (2001). Project joy: Faith based cardiovascular health promotion for african american women. *Public Health Reports (Washington, D.C.: 1974), 116*(Suppl 1), 68-81.

Ybarra, M., & Suman, M. (2008). Reasons, assessments and actions taken: Sex and age differences in uses of internet health information. *Health Education Research, 23*(3), 512–521.

Zong, J., & Batalova, J. (2016). Caribbean immigrants in the United States. Retrieved from http://www.migrationpolicy.org/