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Hypertension Experience of Foreign-born West African Immigrant Women in the United States

Assumpta Onyinye Ude
Walden University

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Walden University

College of Health Sciences

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Assumpta Onyinye Ude

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Review Committee

Dr. Michael Schwab, Committee Chairperson, Public Health Faculty
Dr. Amy Wilson, Committee Member, Public Health Faculty
Dr. Kim Sanders, University Reviewer, Public Health Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2018

Abstract

Hypertension Experience of Foreign-born West African Immigrant Women in the United
States

by

Assumpta Onyinye Ude, MSN

The Catholic University of America, 2008

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Health

School of Health Sciences-Community Health Education

Walden University

February 2019

Abstract

Foreign-born African immigrants (FBAI) have a high rate of severe hypertension (HTN) and psychosocial-cultural factors have underlying roles in this, as in other chronic diseases. Literature lacks studies on FBAI women living with HTN. This study explored the HTN experience of FBAI women in the Washington Metropolitan area. This qualitative phenomenological study, was guided by a theoretical framework that included the Health Belief Model, Patient Centered Access to Health Care and the Transactional Model of Stress and Coping. Highly educated health care professional of 15 women participated in in-depth interviews. Thematic analysis was used for data analysis. Key findings included (a) most had a family history of HTN and believed HTN is deadly but reported going into denial after their initial diagnosis; (b) many did not practice lifestyle modifications and did not consider it a priority to take their medications as prescribed by their clinicians; (c) many preferred their ethnic foods to American food; (d) many used herbs from West Africa, though some were concerned about long-term side effects; (e) many had medical insurance and easy access to HTN services, but reported that clinicians did not listen to their concerns or provide culturally appropriate guidance; and (f) some recommended that HTN treatment services for FBAI should be designed better to address cultural patterns of communication, diet and exercise. The results of this study may contribute to social change by offering more culturally sensitive HTN services that would likely increase treatment compliance among FBAI women

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Dedication

In my opinion, my research is a little discovery of what has been divinely hidden from humanity. Therefore, I dedicate this study to the Almighty God who gave and fueled the knowledge, passion and resiliency to explore, discover and create this dissertation. To my supportive husband, Professor George N. Ude, for being my cheerleader throughout this process and a model in the pursuit of academic excellence. To my three amazing adult-children and bundle of inspiration, Onyedikachi, Chinonso, and Amarachi for their understanding and selflessness that enabled me to complete this journey. To my Father Mr. Oliver Igwe who influenced my choice of a health career and my dear one and only Mother Mrs. Veronica Igwe who sacrificed her high educational pursuit and career dreams on the altar of all my academic achievement. To my parents-in-law of blessed memory Late Chief Jacob and Lolo Beatrice Ude who passed on before I completed this study.

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Chapter 1: Introduction to the Study

Hypertension (HTN) is a medical condition characterized by a sustained systolic blood pressure (BP) above 140 over a diastolic BP above 90mmHg (James et al., 2014). HTN is the leading preventable cause of premature death in America and remains a severe global health challenge (James et al. 2014; Modesti, Perruolo, & Parati, 2015). According to the Centers for Disease Control (Centers for Disease Control [CDC], 2013), approximately 291/1000 (75 million, or 1:3) American adults have high blood pressure. In the United States, clinicians diagnose 6.1% (two million) new cases of HTN every year (CDC, 2013). It is a significant medical reason for the use of prescription drugs among American adults (CDC, 2018).

Despite breakthroughs in public health awareness, treatment, and control, HTN remains a common cause of cardiovascular disease (CVD) and related complications among African-Americans (AAs; CDC, 2013; James et al., 2014). It is a contributing factor for up to 30% of coronary artery diseases, and 50% of strokes in the United States (CDC, 2011). According to Sewali et al. (2015), HTN is also prevalent among foreign-born African immigrants (FBAI), a population that is at a high risk of undiagnosed and uncontrolled HTN and poor HTN outcomes (Zallman et al. 2013; CDC, 2013; Mozaffarian et al., 2015).

Background

In the research, the designation AA historically refers to someone with origins in any of the Black racial groups of Africa (United States Census Bureau [USCB], n. d.). The subdivisions of AAs include those born in United States, Caribbean, and Africa (Agency for Health Research and Quality [AHRQ], 2014). This characterization is significant because the AA statistical data does not distinguish these subgroups and provides inadequate data about foreign-born Africans' health (AHRQ, 2014). In essence, by grouping all those identifying as AAs into one category, the data do not reveal the health intricacies of the FBAI sub-set (Commodore-Mensah, Himmelfarb, Agyemang, & Sumner, 2015; Ndikum-Moffor, Faseru, Filippi, Wei, & Engelman, 2015). Thus, research studies that explore HTN among AAs focus mainly on the U.S-born AAs (Pickett, Allen, Franklin & Peters, 2014; Sanon, Mohammed, & McCullagh, 2014; Kronish, Leventhal, & Horowitz, 2012). There are very few studies on HTN among FBAI, although it appears there may be disparities in cardiovascular health between FBAI and other AA ethnic groups (Commodore-Mensah et al. 2015).

One of the factors that distinguishes FBAI from other US-born AA ethnic groups is a higher level of racial discrimination and poverty that increases as their stay in the United States (Commodore-Mensah et al., 2016; Fang et al. 2012; Leclerc, de Montigny, & Cloutier, 2015).

FBAI women's experiences with chronic disease management show underlying sociocultural and psychological concerns (Ndikum-Moffor et al., 2015). Exploring the lived experiences of FBAI women with HTN could help in the development of programs to reduce or prevent the HTN in this population (Cuffee, Hargraves, & Allison, 2012). According to Agyei, Nicolaou, Boateng, Dijkshoorn, Van den Born and Agyemang (2014) it could perhaps also yield new information about psychosocial stress among United States adult immigrants of African descent.

Problem Statement

HTN is a widely known significant risk factor for CVD (CDC, 2013; James et al., 2014), and is one of the leading causes of death and disability in the United States (CDC, 2013). According to the National Health and Nutrition Examination Survey (NHANES), 29.1 % of adults in the United States have HTN, and 42.1% of United States adults with HTN are AAs (CDC, 2013). This high rate of HTN appears to be mainly severe among FBAI (White et al., 2012; Yi, Elfassy, Gupta, Myers & Kerker, 2014; Sewali et al., 2015; Boise et al., 2013). Immigrant adults of African descent with variable duration of residence in the United States have also reported a high rate of HTN (White et al., 2011; Yi et al., 2014). White et al., (2012), offers a partial explanation, namely that foreign-born individuals are more likely than other groups to believe that HTN is not a severe disease and are more reluctant to seek medical treatment.

Many United States immigrants from West African countries suffer complications from uncontrolled or poorly managed HTN (Yi, S., Zallman et al., 2013; CDC, 2013). However, there is no literature on beliefs about the etiology and treatment of HTN among FBAI women living in the United States or the lived experience of HTN in this population (Krieger, Kosheleva, Waterman, Chen & Koenen, 2011). It is unclear if the high prevalence of HTN among FBAI women is related to their experiences of physical, psychological, or sociocultural stressors (Ndikum-Moffor et al., 2015. Schmieder, Grassi & Kjeldsen, 2013). This study provided data on the lived experiences of West African-born United States immigrant women in the District of Columbia (DC) metro area with HTN. It explored their experiences with diagnosis, treatment, stress and access to HTN health programs.

Purpose of the Study

The purpose of this study was to explore the lived experience of HTN among women ages 18 to 65 years who were born in West Africa and immigrated to the Washington DC metro area. The aim was to generate additional data to close existing gaps in the literature on HTN among women of African descent residing in the United States. I used the constructs of the health belief model (HBM), the transactional model of stress and coping (TMSC) and patient-centered access to health care (PCAHC) model, to examine the participants' beliefs, ideas, and views about the causes and treatment of HTN.

The findings provided data that could help in developing culturally appropriate and sensitive interventions for the target population. This study also generated additional information that may help in explaining the link between psychosocial stress and HTN for researchers and public health officials working with the West-African immigrant population.

Research Questions

Research Question (RQ) 1 (RQ1): What is the lived experience of FBAI women regarding HTN diagnosis and treatment?

Research Question 2 (RQ2): What do FBAI women believe about the causes and complications of HTN?

Research Question 3 (RQ3): What is the experience of stress and coping among FBAI women with HTN?

Research Question 4 (RQ4): What is the experience of FBAI in accessing health care for HTN?

Research Question 5 (RQ5): What do FBAI women believe should be the ingredients of a successful HTN education program?

Theoretical Framework

I used the HBM, TMS, and PCAHC models as the theoretical framework for this study. I utilized the concepts and constructs from these three theories to develop the interview questions (Glanz, Rimer & Viswanath, 2015).

The HBM emphasizes the interaction between intrapersonal, demographic and psychosocial factors that predict health behavior (Glanz et al., 2015). Four social psychologists (Hochbaum, Rosenstock, Leventhal, and Kegell) developed the HBM in the 1950s (Glanz et al., 2015). The six constructs of the HBM include perceived susceptibility to the particular illness, perceived degree of harm resulting from the disease, perceived benefits of taking a specific health action, perceived barriers to taking action, and 'general health motivation' or self-efficacy (Glanz et al., 2015).

The HBM has been used widely in research that explored various aspects of health behavior (O'Connor, Martin, Week, Ong, 2014; Kamran, Ahari, Biria, Malpour & Heydari, 2014). I used some of the HBM constructs to explore perceptions about the causes and severity of HTN and the benefits of treatment. The TMSC postulates that chronic interactions with the stressful factors in a person's social environment result in activation of stress emotions and difficulty in emotional regulation and leads to chronic stress-emotions and physical health changes (Lazarus & Folkman, 1984a, 1984b). The primary constructs that emerged from TMSC in previous studies are: personal and environmental antecedents, emotional regulation, chronic stress emotions, and physical health outcomes (Peters, 2001).

The PCAHC model describes strategies of seeking and using health services to reach and fulfill the identified health need of communities (Penschansky & Thomas, 1981).

Penschansky and Thomas (1981) postulate that access to health services is an essential component of patients' experiences with the healthcare system. The five constructs of PCAHC are availability, accessibility, accommodation, affordability, and acceptability (Penschansky & Thomas, 1981).

Nature of the Study

In this study I used a qualitative method with a phenomenological approach for an in-depth description of FBAI women's lived experiences. The qualitative method of inquiry is derived from the research tradition of constructivism and inductive approach (Creswell, 2013; Patton, 2015). The philosophy of constructivism is based on formulating a concept using individual experiences or ideas (Creswell, 2013; Patton, 2015). Inductive approach that emphasizes robust data collection, and identification of patterns that could potentially help to explain a specific phenomenon (Creswell, 2013; Patton, 2015).

Phenomenology has been used to design various studies that examined life experiences with events and diseases (Kronish et al., 2012; Lee et al., 2014). I used purposeful convenience sampling to recruit 10–15 English-speaking West-African born women living in the Washington Metropolitan area, and a semi structured questionnaire for collecting data through face-to-face interviews in public locations or homes as determined by the participants. One-on-one interviews using open-ended questions allowed the respondents to provide detailed answers and freely expressed their thoughts in their own words. I used telephone interviews for those I could not reach in person.

Definition of Terms

African-American: U.S.-born Non-Hispanic Blacks (CDC, 2012).

Cardiovascular events: Poor outcomes from inadequate BP control, including deaths and hospitalizations due to heart attacks, kidney failure, heart failure and strokes (CDC, 2012).

Foreign born African Immigrants: Adults born in West African countries and currently living in the US (CDC, 2012; United States Census Bureau, n. d.).

Immigrants: Persons living in the US who reported being born outside the US (Commodore-Mensah et al., 2016).

JNC 8: The Eighth *Joint National Committee* evidence-based guidelines for the management of high blood pressure in adults (James et al., 2014).

Lived Experience: Opinions, wishes, memories, sensations, views, ideas, understandings, thoughts, emotions and beliefs about a concept, meaning, perspective (Sanon et al., 2014).

Pre-hypertension: Systolic blood pressure of 120–139 mmHg and diastolic pressure of 80–89 mmHg (CDC, 2014).

Poor hypertension outcomes: Complications of uncontrolled or poorly controlled high blood pressure (CDC, 2016).

Poorly controlled or resistant hypertension: Sustained blood pressure over 140/90mmHg despite the use of medications and/or lifestyle modification measures (CDC, 2012).

Resistant hypertension: Blood pressure that is not controlled despite adherence to an appropriate three-drug regimen (including a diuretic) in which all drugs are dosed at 50 percent or more of the maximum recommended antihypertensive dose; or blood pressure that requires at least four medications to achieve control (James et al., 2014).

Uncontrolled hypertension: Elevated blood pressure that is not managed by the individual affected due to any reason (CDC, 2012).

White coat hypertension: Persistently elevated blood pressure when measured in the office, but repeatedly normal blood pressure when measured at home, or work (James et al., 2014).

Assumptions

I presumed that recruiting and interviewing women from various countries of West Africa will enhance diversity in the HTN experiences of participants. I assumed that excluding participants above 65 years would result in a sample of educated people who are fluent in the English language. I guessed that because I was born in West Africa, participants will feel comfortable to participate in the study. Hypothetically, FBAI women's length of stay, educational status, age, and beliefs will influence their lived experiences related to HTN.

Scope and Delimitations

Sources of data for this study were from interviews with U.S. immigrants originally from West Africa between 18 and 65 years of age who reported a diagnosis of HTN. The participants included married and single women regardless of their medical insurance status. The inclusion of only women of West African descent that reported diagnosis of HTN limited generalizing the results to all foreign-born African adult immigrants with HTN in the United States.

Limitations

There are potential weaknesses inherent in a qualitative design that includes the use of individual face-to-face interviews (Maxwell, 2013; Creswell, 2013). My multiple roles as the researcher, interviewer, and the exclusive use of one-on-one interview for data collection limited the credibility of findings in the study. Maxwell (2013) and Patton (2015) stated that setting up interviews to fit participants' schedule may be a challenge in qualitative studies. I interviewed the participants at their places and time (Maxwell, 2013; Patton, 2015). So, I made sure the participants chose the time and places convenient for them. I interviewed them within the time frame designated in the consent form. Lincoln and Guba (1985) stated that using open-ended questions and probing approach facilitate collection of detailed information. Therefore, I used 40 open-ended questions. I also interviewed a fairly heterogeneous sample of women from various countries of West Africa to maximize trustworthiness and integrity.

Significance of the Study

In the United States, HTN contributes significantly to personal distress as well as accounting for approximately \$320 billion in annual health care expenditures (Mozaffarian et al., 2016). Though HTN is a significant health concern among the AAs, little is known about what FBAI believe about the causes and treatment of HTN (Sewali et al., 2015). Several studies have identified the link between belief, social-psychological stress, and blood pressure control among AAs (Schmieder et al., 2013). Cuffee et al. (2012) explained the interplay of AA women's beliefs, perceptions, thoughts, opinion, and memories with HTN management. Krieger and colleagues reported that foreign-born workers who lived in the United States for many years had high levels of psychosocial stress.

This study provided additional data on the lived experiences of stress and HTN among FBAI women with various lengths of stay in the United States. It also provided relevant data to promote understanding of common perceptions held by West African immigrant adult women about HTN. The findings could be useful in designing culturally sensitive HTN educational programs and reducing cardiovascular health disparities in the United States African immigrant women's population.

Significance to Practice

HTN is a common reason for physician office visits in America and is also a primary medical reason for the use of prescription drugs among American adults (James et al., 2014; CDC, 2013). Individuals' beliefs and perceptions about HTN play a critical role in influencing their health behavior (Leclerc et al., 2015). Healthy People 2020 included objectives to reduce the prevalence of HTN among adults and to increase the number of adults with HTN whose BP values were within the normal range (CDC, 2013; 2015). The CDC recommended several strategies to achieve optimum BP control in adults especially the AA minority that are very vulnerable to the disease. These measures include the use of innovative culturally appropriate health-care delivery models that promote self-monitoring and effective self-management of BP (CDC, 2012).

The current research provided valuable data for more efficient evidence-based and culturally appropriate care and education of adult African immigrant women with HTN.

Significance to Theory

The FBAI are a vulnerable population that public health researchers in the United States have not examined adequately (Ghobadzadeh, Demerath & Tura, 2015). Several studies that examined perspectives AA women about chronic disease management did not distinguish data on African-born immigrants and AAs (Ghobadzadehet al., 2015). Despite the physical similarities, these two groups are vastly diverse ((Kamran et al., 2014; Sanon et al., 2014; Leclerc et al., 2015).

The exploration of cultural ideas, views, understanding, and beliefs that are peculiar to FBAI women may generate concepts for further research framework on the management of HTN (Ndukwe, Williams & Sheppard, 2013; Marden, Walter, Kaufman &, 2016).

The themes that emerged from the study provide building blocks for a conceptual framework that could be useful to examine FBAI adherence to HTN management. The current research findings may also contribute to reducing the existing wide cardiovascular disparities related to poor HTN control among United States foreign-born immigrants.

Significance to Social Change

The rising number of immigrants from West Africa residing in the United States places a financial burden on publicly funded health care (DuBard & Massing, 2007).

Poor health access among immigrant communities may be due to decreasing funds and increasing rates of immigration of adults from foreign countries (Kent, 2007; Derose, Escarce & Lurie, 2007). Notably, the visa lottery program implemented by the U. S. Government propelled the number of sub-Saharan Africa adults permanently relocating to the United States.

The 1996 Welfare Reform Act barred legal immigrants who entered the United States after August 1996 from Medicaid for 5 years after immigration (Kandula, Grogan, Rathouz & Lauderdale; 2004; Derose et al., 2007).

Consequently, FBAI who are recent visitors or residents in the United States, are less likely to qualify for health coverage reserved for U.S. citizens because of federal laws that limit their Medicaid eligibility (Kent, 2007; Kandula et al., 2004). Temporary and undocumented immigrants are also ineligible for Medicaid irrespective of their length of stay (Derose et al., 2007).

The Patient Protection and Affordable Care Act (PPACA) Medicaid expansions resulted in higher rates and improved quality of insurance coverage, as well as higher rates of health care utilization and diagnosis of chronic illness among low-income adults (Wherry & Miller, 2016). However, a significant number of undocumented immigrants have no health care coverage (Brown, Wilson & Angel, 2015). Immigrants without health benefits typically end up getting immediate care in high cost hospital emergency rooms (Brown et al., 2015).

This study may provide significant data that could help develop a culturally relevant process for addressing the healthcare needs of U.S.-based FBAI with HTN, especially those who may not be able to access medical and healthcare services. Furthermore, HTN is a significant health concern among FBAI and there is little information about perceptions of US immigrant women from West-Africa regarding HTN (CDC, 2013).

This study could equip clinicians and health providers serving FBAI women with culturally effective HTN education and counseling tools.

Other researchers may also build on these findings to develop further culturally competent interventions. That will hopefully contribute to narrowing the literature gap in FBAI HTN research. Furthermore, a better understanding of the perceptions FBAI woman have about HTN may help public health practitioners serve FBAI ethnic groups.

This study could facilitate the development and design of more efficient safety net HTN programs to assist those who may not have medical insurance coverage. The concepts that could emerge from this study may be relevant for the development of culturally appropriate FBAI community-based participatory HTN programs and reduce cardiovascular health disparities. This study may provide useful information on how women in underserved immigrant communities perceive the relationship between stress and HTN.

Summary

Chapter 1 provided the background of the study, including an overview of the problem, purpose, significance of the research, theoretical foundation, and the assumptions. It also included a brief description of the methodology and operational definitions of key terms in the study. Chapter 2 is the review of the literature on HTN in AAs, other United States immigrants and FBAI in the United States. The literature review includes information regarding causes, management, psychosocial and cultural factors related to HTN.

Chapter 2: Literature Review

Introduction

HTN is a common chronic disease and one of the risk factors for CVD in the United States (James et al. 2014). HTN is also extremely prevalent among AAs including FBAI adults, and especially women (Kent, 2007; Zallman et al., 2013; CDC, 2013; Mozaffarian et al., 2015). It is estimated that over 40 million women have HTN (Mozaffarian et al., 2015). According to the CDC, though the CVD mortality rate has reduced in the past years, uncontrolled HTN is still an independent predictor of complications and deaths related to CVD. A recent CDC report showed that a significant percentage of U.S. adults either do not know that they have HTN or have diagnoses of HTN but are not taking BP medication (CDC, 2016).

Studies have reported that some AAs with HTN believed stress-producing factors contributed to their illness (Sanon et al., 2014; Kronish et al., 2012; Pickett et al., 2014). FBAI attributed the high rate of HTN to stressful experiences related to migration and meeting financial family obligations in their homelands as they adapt to Western society and lifestyles (Beune, Haafkens, Schuster, & Bindels, 2006; Commodore-Mensah et al., 2016). Recent studies by Crump et al. (2016) and Summer et al. (2016) about psychological stress and HTN included participants who were predominantly Caucasians and highly educated AAs and did not include FBAI women sub-group.

The purpose of this study was to understand the perceptions of ethnic minority FBAI women about HTN. I used a phenomenological approach to examine the opinions of FBAI women living with HTN and describe their ideas about causes and treatment of the disease. The literature review includes the definitions of common types of HTN, contributing factors, screening, diagnosis, pathophysiology, prevalence, prevention, and treatment. In the literature review section, I will explore various community health programs for management of HTN: the TMSC, HBM and PCAHC theoretical perspectives and conceptual framework. I will also examine sociocultural and demographic factors related to HTN among FBAI.

Literature Search Strategy

I used various online databases such as PUBMED and Cochrane Database of Systemic Reviews to search for current research publications and peer-reviewed articles about African immigrants and hypertension. I used the keywords in the topic and searched for recent reports and original scholarly works in various texts including journal articles. I used Thoreau's advanced search tool to locate several databases simultaneously and was able to limit the search per year, by subject, publication date, and geography. Also, I used Google Scholar and CINAHL and MEDLINE simultaneous search database to conduct searches.

The keywords and concepts I used for literature search included: *hypertension, management, causes, health, belief model, perceptions, immigrants, patient centered care model* and *African*.

Theoretical Framework

I used three theoretical models to provide a framework for this study: the HBM the PCAHC and the TMS. I integrated the constructs of the three models into the design the interview tool for the research.

Health Belief Model

The HBM was developed to examine a person's motivation, decision, and capability of engaging in a healthy behavior (Rosenstock, Strecher & Becker, 1988; Rosenstock, 1974). The HBM includes six constructs, including perceived susceptibility, perceived severity, benefits, barriers, cues to action, and self-efficacy (Glanz et al., 2012). The constructs of HBM focus on beliefs about the causes and seriousness of HTN, and effective treatment strategies. I used the HBM as applied in a study by Kamran and colleagues (2014) that examine immigrants' perception to provide a theoretical perspective. As evidenced in Kamran et al (2014) study design, the HBM will provide useful lens for exploring sociocultural beliefs that may impact participants' understanding of HTN management and treatment. In a study that examined immigrants, the HBM was appropriate for explaining participants' beliefs which provided more validity for the findings (Sanon et al., 2014).

The HBM posits that individuals must believe that their health is in jeopardy for compliance and adoption of health-promoting behaviors (Rosenstock et al., 1988), and explains why some FBAI women adopt specific health behaviors in preference over others. Women who perceive the severity of their disease and are aware that healthy behaviors reduce the likelihood of a severe outcome, and understand their barriers to change, are more likely to have a good understanding of causes and treatment of HTN.

The demographic and psychosocial factors such as age, health literacy, length of stay in United States and education may be helpful in using the HBM constructs to answer the research questions. The concepts of the HBM were applied in a study that examined the beliefs and perception of men living with hypertension (Leclerc et al., 2015). I utilized some constructs from the HBM to explore participant's understanding about causes and treatment of HTN to develop the interview questions. Using the HBM may help description of the relationship between perception and about causes and management of HTN among African immigrants (Asare, Sharma, Bernard, Rojas-Guyler & Wang, 2013).

The constructs are helpful in understanding the factors that contribute or affect FBAI women's perceived susceptibility, perceived barriers, cues to action and self-efficacy. Asare and colleagues (2013) used the HBM constructs in their design of the questionnaire used to examine health behavior among African immigrants in Ohio.

Kamran et al. (2014) used the constructs of HBM in developing a survey for a study that examined determinants of patients' adherence to hypertension medication. The HBM also provided a framework for describing perceptions of Tunisian women about their health practices related to osteoporosis (Belgacem, Noura & Soussi, 2016). Leclerc et al. (2015) also used the framework to explore the beliefs and perception of men living with HTN.

Transactional Model of Stress and Coping

The TMSC describes the transaction or interaction that occurs between a person & the environment (Lazarus & Folkman, 1984a, 1984b). It posits that stress results from an imbalance between demands and available coping resources (Lazarus & Folkman, 1984a, 1984b). The model asserts that a person experiences stress when internal and external pressure exceeds the ability to cope (Lazarus & Folkman, 1984a, 1984b). Furthermore, the individual's characteristics and environment contribute to the meaning that a person assigns a specific stressful event (Lazarus & Folkman, 1984a, 1984b). The TMSC is used to explain how people manage themselves at times when pressing demands exceed their coping resources (Groomes & Leahy, 2002).

The TMSC has been a useful theoretical lens for examining the interaction between a person and his or her various responses to situational demands (Groomes & Leahy, 2002). It is appropriate to apply the theory in exploring the lived experiences of FBI who sometimes face stressful situations related to adjusting to the United States' health and social environment (Lazarus & Folkman, 1984a, 1984b).

The Patient-centered Access to Health Care Model

The PCAHC model highlights access to health regarding interactions with health systems, institutions, organizations, and health care providers (Levesque et al., 2013).

The PCAHC model describes a person's level of satisfaction with health care and services as a multidimensional problem of (a) availability, (b) accessibility, (c) affordability, (d) accommodation, and (e) acceptability of services (Agabin & Coffin, 2015; Penschansky & Thomas, 1981). This model can be used to formulate questions that explore immigrants' ability to seek, reach, obtain, pay, engage with or use health care services, and their level of satisfaction with services provided in their communities (Levesque, Harris & Russel, 2013). The model posits that a multidisciplinary approach to improving access to health services by providers, medical practices, pharmacies, hospitals, and community health workers influences immigrants' perceptions of health needs and desire to seek chronic disease treatment (Agabin & Coffin, 2015; Khongthanachayopit & Laohasiriwong, 2017). The PCAHC model of examining access to health care provides building blocks for meeting the health care needs of a minority immigrant population (Levesque et al., 2013; Lopez-Martinez et al., 2017; Veenstra, 2012)

The PCAHC identifies factors that determine access to health care, including health literacy, health beliefs, trust, expectations, personal social values, and culture.

Other factors that enhance access to care are the environment, transportation, mobility, social support, income, assets, social capital health insurance status, empowerment, and information or awareness of health program and caregiver support (Levesque et al., 2013; Saurman, 2016). Further aspects of accessible health programs include: comprehensiveness of care, care coordination, and flexibility enhanced by the availability of healthcare after regular hours. Various scholars who examined immigrant minority groups in developed and developing countries used the PCAHC framework in their research (Khongthanachayopit & Laohasiriwong, 2017; Salvadori, 2016; López-Martínez et al., 2017; Veenstra, 2012). According to the CDC, patient-centered access to treat blood pressure screening improves the proportion of patients with controlled blood pressure (Agabin & Coffin, 2015; Saurman, 2016). Incorporating the PCAHC model in examining ideas related to awareness of available HTN programs could generate concepts that could be potentially used to improve access to health centers serving FBAI communities (Armstrong et al., 2015; Saurman, 2016).

The PCAHC framework is appropriate for patients with chronic illness like HTN for which regular access to primary care physicians and cardiologist are necessary to improve outcomes (Armstrong et al., 2015). The various dimensions of access to care are described in studies that examined African immigrants (Levesque et al., 2013; Agabin & Coffin, 2015). My study examined participants' experiences related to availability, acceptability, approachability, affordability, and appropriateness.

Application of PCAHC to African Immigrants

Availability. Availability refers to ease of using existing health resources (Levesque et al., 2013). Health care access is restricted from immigrants who are not aware of the existence of those health services (Levesque et al., 2013). Many African immigrants reported a lack of awareness of where to go for health care and are confused about how to navigate the U.S. healthcare system (Boise et al., 2013). Some of the factors that affect accessibility are geographical location of the hospitals and healthcare centers that provide health services to ethnic minorities (Derose et al., 2007). FBAI living in both cities and rural areas have limited access to specialty care, difficulty getting specialty care referral due to insurance status, and may have long waiting times before getting an appointment with a healthcare provider (Okie. 2007).

Acceptability. Acceptability refers to the beliefs about the health providers' system of medical practice. For example, an immigrant woman with HTN may be discouraged to seek health care from a clinic where all the medical providers are male (Levesque et al., 2013). The lack of culturally humble providers in the healthcare centers located in immigrant neighborhoods may also affect acceptance of health services (Derose et al., 2007). New arrivals among the FBAI may be more comfortable with seeking health services from advocacy or community-based health organizations that other immigrants promote (Derose et al., 2007).

Affordability. The ability to pay for healthcare affects the rate of utilization of health services (Levesque et al., 2013; Wafula & Snipes, 2014). Despite the high educational level of Sub-Saharan African immigrants, they are often underemployed with little earnings and unable to afford the high cost of health care (United States Department of Commerce [USDC], n.d; Singer & Wilson, 2006). Some of the African immigrants are recent visitors to the US and are prone to labor market discrimination (USDC, n.d). They may also face difficulties in transferring their credentials from their home country to the US (USDC, n.d).

It usually takes at least 5 years of residency to qualify for citizenship and become eligible for health coverage funded by the State (Kent, 2007). Despite the healthcare coverage through the implementation of the Patient Protection and Affordable Care Act of 2010, many uninsured undocumented African immigrants and legal residents of less than 5 years may not purchase insurance through the newly available market exchange (Agabin & Coffin, 2015). Furthermore, many of the FBAI, who are new in the United States are employed in jobs with no health benefits and do not have Medicaid coverage (Agabin & Coffin, 2015).

Approachability. Various elements such as transparency, information regarding available treatments, trust and expectations from outreach activities determine health facilities that are more or less approachable (Levesque et al., 2013). FBAI has a language barrier that affects their ability to access health care (Adekeye et al., 2014; Boise et al.,

2013). Some FBAI may not be fluent in English. As a result, understanding or communicating health matters and navigating health system very challenging (USDC, n. d.).

Appropriateness. Appropriateness relates to the fit between services and patient needs. According to the United States Census Bureau (n. d.), the FBAI population has roughly doubled each decade since 1970, with the most significant increase from 2000 to 2008-2012. The FBAI account for 4% of the total US foreign-born population and are highly educated compared to other foreign-born immigrants (USDC, n. d.).

Approximately 41 percent of the African-born US immigrants are individuals who left their homelands in four West African countries, specifically Nigeria, Ethiopia, Egypt and Ghana and resettled and re-establish their lives in the United States (Singer and Wilson, 2006; USDC, n.d). Maryland is one of the ten states with African-born populations over 100,000, and the Washington Metropolitan areas have one of the highest numbers of African-born people of about 161,000 (USDC, n. d.). As a result FBAI needs technical, economic, and interpersonal empowerment to ensure better access to quality care and ensure continuity of accessing care (Levesque et al., 2013).

Nature of Hypertension

According to the CDC (2014), BP is the force of the blood against artery walls as the heart pumps blood through the body measured in millimeters of mercury (mmHg).

The systolic blood pressure (SBP) is the pressure when the heart squeezes or contracts to push blood out to the rest of the body (CDC, 2015). In contrast, the diastolic pressure (DBP) is the pressure when the heart rests and relaxes between beats or contractions (CDC, 2015). BP values may fluctuate as a result of exercise, rest, or emotions (CDC, 2014). Healthy BP ranges from 90/50 to 120/80 with an average reading of 120/80 mmHg (CDC, 2014). HTN or high blood pressure in adults occurs when the repeated checks of BP is higher than 140/90 (CDC, 2014).

In adults, HTN is poorly controlled or resistant when the BP is above 140/90 mmHg despite the use of medications (CDC, 2012; James et al., 2014). HTN is commonly known as a 'silent killer' because it does not show any warning signs or symptoms (World Health Organization [WHO], 2013; CDC, 2014). However, in rare cases, some clinical symptoms may include headaches, vomiting, dizziness, nosebleeds, blurred vision (CDC, 2014). Complications of HTN are ischemic heart disease, heart attack or myocardial infarction, stroke, left ventricular hypertrophy, congestive heart failure and chronic kidney disease (Piper et al., 2015; Yang et al., 2012).

Types of Hypertension

There are two major types of HTN: primary HTN (PHTN), also known as essential HTN; and secondary HTN (James et al., 2014).

PHTN is an inherited disorder in the genes that regulate renal sodium, which clinically shows when there is excessive salt intake (Myers, Kaczorowski, Dawes and Godwin, 2014; Weber, Schiffrin & White, 2014). Although the cause of PHTN is not apparent, studies have reported that PHTN may be due to the interplay of genetic and environmental factors that increases susceptibility to the effects of dietary salt intake on blood pressure (Weber et al., 2014; Kaplan, 2017). This interaction results in an unusually high activity of the renin-angiotensin-aldosterone system and the sympathetic nervous system (Weber et al., 2014). Secondary HTN occurs as a result of underlying illness, disease or medical problems or medications (Weber et al., 2014). Additionally, white coat or reactive HTN refers to BP that is consistently elevated by office readings but does not meet diagnostic criteria for HTN based on out-of-office readings (Weber et al., 2014).

Table 1

Stages of Hypertension

Stages	BP, mm Hg
Normal	systolic: less than 120 mmHg diastolic: less than 80mmHg
Pre-hypertension	systolic: 120–139 mmHg diastolic: 80–89 mmHg
Stage 1 HTN	SBP 140-159 or DBP 90-99
Stage 2 HTN	SBP \geq 160 or DBP \geq 100

Adapted from CDC (2014, 2016)

As shown in Table 1, normal BP refers to SBP of less than 120 mmHg and DBP of less than 80 mmHg, and pre-hypertension occurs with SBP of 120-139 mmHg or DBP 80-89 mmHg (Chobanian et al., 2003; James et al., 2014). HTN develops when systolic or diastolic BP is above 140/90 mmHg (Chobanian et al., 2003; James et al., 2014). There are two stages of HTN. Stage 1 HTN refers to SBP of 140-159 mmHg or DBP of 90-99 mmHg, and Stage 2 HTN is SBP above or equals 160 mmHg or DBP greater or equal 100 mmHg (Chobanian et al., 2003; James et al., 2014).

Prevalence in general population. According to the WHO International society of HTN report, inadequate BP control is the primary reason for CVD related deaths worldwide. About 33.5% of US adults 20 years and over have HTN (Roger et al., 2012). HTN is a contributing factor to the high rate of CVD in the general US population (James et al., 2014). In the US, HTN is the most common reason for clinic visits and use of prescription drugs (Kaplan, 2017; Kaplan & Victor, 2017; James et al., 2014). It occurs earlier and more frequently in non-Hispanic Blacks than any other ethnic group (Egan, Zhao & Axon, 2010).

Prevalence in African Americans. African American women have one of the highest prevalence rates of HTN (41.3%) compared to Caucasians (28.6%) Mexican Americans (27.5%) and Hispanics (27.7%) (James et al., 2014; Mozaffarian et al., 2016; CDC, 2013). HTN among American adults also contributed to about 362/1000 deaths of Americans in 2010(Piper et al., 2014). According to the CDC (2015), though women are as likely as men to develop HTN in their lifetime, black women are at higher risk of developing HTN at an earlier age compared to Hispanics and the Caucasian women(CDC, 2016).

Approximately, 291/1000 of U.S. adults in 2011 to 2012 had HTN (Nwankwo, Yoon, Burt, & Gu, 2013).The prevalence rate increase from 7.3% in persons aged 18 to 39 years to 32.4% in those aged 40 to 59 years (Yang et al., 2012; James et al. 2014; United States Preventive Services Task Force[USPSTF], 2016). Among those aged 60 years or older, the prevalence rate is up to 65.0% with the highest percentage of non-Hispanic black adults (42.1%). When compared with Caucasian counterparts (28.0%), Hispanic (26.0%), and Asian (24.7%) (Yang et al., 2012; James et al., 2014).

AA cultural beliefs about the causes of HTN, medications, and lack of trust in health care providers have been attributed to the high rate of HTN in AA despite the general increase in public health awareness (Frosch, Kimmel, Volpp, 2008).

Description of foreign-born African immigrant population. In the 2000 Census, roughly 12.9 percent of the U.S. population (36.2 million people) identified as Black or African American (USCB, 2007; Schmidley, 2001). However, 24% of foreign-born Blacks are from Africa (USCB, 2007; Schmidley, 2001). FBAI community members are individuals that were born in any of the West-African countries and are currently living in the United States (Lee & Mather, 2008). In a report that compared U.S.-born, European-born, African-born, and West-Indian-born Black ethnic groups aged 18 and older, immigrants from West African countries are the fastest growing immigrant populations in the U.S (USCB, n.d; Haub & Kent, 2007; United States Department of Homeland Security, 2012). Many foreign-born African immigrants reside in California, New York, Texas, Maryland, and Virginia and approximately 11 percent of immigrants in the Washington metropolitan area are FBAI (Kent, 2007).

The FBAI includes legal permanent residents with green card status, refugees, asylees, and other humanitarian immigrants (KFF, 2016; Williams & Jacksons, 2000). There is no recent or accurate data on the percentage of FBAI, who are undocumented or illegal immigrants (Djamba, 1999; Jensen, 2006). The FBAI community also includes those born in Africa to non-U.S. citizens who identified as black alone or black in combination with another race (Kent, 2007).

Most of the FBAI was born in Nigeria, Sierra Leone, Ghana, and Cameroon, Liberia, Somalia, Guinea, Sudan, and Kenya (Kent, 2007).

A significant number of FBAI in the DC metro area came to the US between 1980 and 1990's (Singer and Wilson, 2006; United States Department of Health and Human Services [USDHHS], 2016). While 67% came to the US since the year 2000 (Singer and Wilson, 2004; USDHHS 2016). Approximately, 52% are males, and 84% are between 18 to 64 years (Kent, 2007). Most of the members of this community have higher education and speak English fluently. Many of the FBAI work in management, healthcare, production, and taxi driving (Kent, 2007).

In 2005, the median household income for FBAI in Washington metro area was about \$53,000 (Kent, 2007). There are sociocultural and behavioral factors that influence HTN management (Sewali et al., 2015). These factors include poor social support, financial obligations to support the family overseas and immigrants' use of herbal remedies from their countries to treat HTN (Ghobadzadeh et al., 2015; Beune et al., 2006; Daramola & Scisney-Matlock, 2014; Gestaldo, Gooden, & Massaquoi, 2005; Sanon et al., 2014).

Trans-nationalism is the maintenance of relationships that cut across the geographical borders of countries (Portes & Zhou, 2012).

Participating in health activities in African home countries of origin facilitates information exchange to enable maintenance of a close relationship with friends, and family members in their countries of birth (Portes & Zhou, 2012).

FBAI women may maintain a transnational relationship that promotes their views about HTN and is not easily changed (Portes & Zhou, 2012; Rosemberg, Boutain, & Mohammed, 2016).

Prevalence in foreign-born African immigrants. According to the National survey data reported by the CDC (2013), there are disparities in HTN prevalence among adults born outside of US (25.7%). According to Yi, Elfassy, Gupta, Myers & Kerker (2014), foreign-born immigrants have a higher rate of HTN than U.S.-born individuals. In the Washington DC Metro area, Commodore et al., (2014) reported 53% hypertension prevalence among immigrants from West African countries such as Nigeria and Ghana. Immigrants from Liberia, West Africa, were among those with a higher incidence of HTN compared to Sudanese from the East Africa (Sewali et al., 2015).

Among immigrants in other developed countries, immigration status has contributed to more cases of HTN (Borné, Engström, Essén & Hedblad, 2012). Immigrant blacks with less education, reduced employment, and a lower literacy level have a higher rate of HTN (Commodore-Mensah et al., 2016). This increase of HTN among the FBAI may also be due to cultural beliefs, communication barriers, low health literacy and inadequate access to medical care(White et al., 2012). Factors that may contribute to high prevalence of HTN among FBAI women also include stressful lifestyles, experiences with racism, and lack of social relationships (Frosch et al., 2008, Popovic-Lipovac & Strasser, 2015).

Additionally, FBAI is less likely to recognize their HTN status and reported lack of regular medical screening practices in their countries-of-origin (Frosch et al., 2008, Popovic-Lipovac & Strasser, 2015).

The prevalence of self-reported HTN is lower than the rate of actual HTN confirmed with measurements among foreign-born Africans in the US (White et al., 2012). The apparent interaction between self-reported HTN, race/ethnicity and acculturation-related factors warrants further exploration (Commodore-Mensah et al., 2016). The high prevalence of HTN and other CVD risk factors among immigrants could also be linked to acculturation or length of residence (Commodore-Mensah et al., 2016).

Though United States surveys have no particular reference to FBAI women, Yi et al., (2014) reported a high prevalence of HTN among African immigrants in the United States with a more extended stay. United States AA immigrants residing in the United States, for ten years or more, have a high rate of self-reported HTN (Commodore-Mensah et al., 2016). Perhaps, immigrant women with a more extended stay in the United States may still retain cultural biases about HTN which they adopted from their countries of origin (Popovic-Lipovac & Strasser, 2015; Zlotnick, Goldblatt, Shadmi, Birenbaum-Carmeli & Taychaw, 2015).

Contributing factors of hypertension in the general population. There are numerous modifiable and non-modifiable risk factors that predispose individuals to develop HTN (James et al., 2014).

In the general population, the non-modifiable risk factors include advanced age, genetics, and post-menopausal status (James et al., 2014; Myers and Godwin, 2012; Weber et al., 2014). Blood pressure tends to rise as adults advance in age (CDC, 2014; James et al., 2014; Myers et al., 2014; Weber et al., 2014). Arterial stiffness increases with increasing age may also contribute to more pronounced risk for HTN in women independent of any effect of menopause (O'Neil, Liu, Rourke, 2013).

Modifiable risk factors in the general population include overweight and obesity, smoking, excessive alcohol intake, and sleep disturbances specific medications, drugs and chronic disease (James et al., 2014; CDC, 2015). Illicit drugs such as methamphetamines and cocaine may also precipitate HTN (James et al. 2014; CDC, 2015). Specific prescription or over-the-counter medications, such as oral contraceptives. Especially those containing high doses of estrogen (James et al., 2014; CDC, 2015), non-steroidal anti-inflammatory drugs (NSAID) including tricyclic antidepressants, and selective serotonin reuptake inhibitors (Grossman, Messerli & Grossman, 2015).

Other medications that increase the risk of HTN in the general adult population include glucocorticoids, decongestants such as pseudoephedrine, weight loss medications, erythropoietin cyclosporine, and stimulants including methylphenidate and amphetamines, estrogen and oral contraceptives (James et al., 2014). Some chronic illness such as renal disease, Cushing's syndrome, pulmonary disease and obstructive sleep apnea also increase the risk for HTN (James et al., 2014; CDC, 2015).

Other risk factors include pregnancy, congenital deformity such as coarctation or narrowing of the aorta, and other endocrine disorders such as hypothyroidism, and hyperthyroidism (James et al., 2014; CDC, 2015). The consumption of caffeinated products, may also contribute but remains a controversial risk factor for HTN (CDC, 2015).

Excess dietary sodium intake. Excess salt intake is believed to activate intravascular fluid volume expansion resulting in increased blood pressure (Koliaki & Katsilambros, 2013; Safar et al., 2009; Paterna, Gaspare, Fasullo, Sarullo & Di Pasquale, 2008; Aaron & Sanders, 2013). It appears there may be an association between salt-sensitive HTN, excess production of reactive oxygen species (ROS) and reduction in vascular NO (Boegehold, 2013; Aaron & Sanders, 2013).

Dietary salt produces a significant reduction in the bioavailability of vascular NO in the arteries which limits dilatation dependent on the endothelium (Boegehold, 2013; Aaron & Sanders, 2013).

Obesity and lack of physical exercise. Lack of regular physical activity increases the risk of obesity and HTN (CDC, 2005). According to the American College of Sports Medicine, adults need to engage in at least 30 minutes of moderate-intensity physical activity every day. Research has shown an association between lack of regular physical exercise or lack of participation in a moderate physical activity and increased risk for obesity-related to HTN (White, Pettee, Yongin, Lewis & Sternfeld, 2015).

Lack of regular short spurts of moderate to vigorous physical activity is shown to increase the risk of developing HTN (White et al., 2015).

African immigrants with a more extended stay in the US are more likely to be obese than recent arrivals in the US (Venters and Gany, 2011; Beune et al., 2006). Many African immigrants are overweight and associate HTN with obesity (Beune et al., 2006). Research shows the main reasons for the increasing rate of obesity among African immigrants include less physical activity, increased use of labor-saving technologies, and the availability of high-calorie foods they are not accustomed to in their origin country, including more packaged and processed foods (Gele and Mbalilaki, 2013).

The lack of accessible, safe walking routes for pedestrians in residential areas including poor streets' design and connectivity constitute barriers to regular exercise (Müller-Riemenschneider et al., 2013). There are also cultural differences in participating in outdoor versus indoor workouts at the gym (James, Efunbumi, Harville & Sears, 2014; Wilder, Schuessler, Hendricks & Grandjean, 2010). The cost of gym membership and lack of safe walking routes in the neighborhoods may contribute to reduced participation in both indoor and outdoor exercises (James et al., 2014).

Smoking. Cigarette smoking increases the risk for HTN (CDC, 2014).

Smoking tobacco products increase the blood level of nicotine, and long-term consumption may cause damage to the inner lining of arteries, thereby narrowing the vascular lumen resulting in BP elevation (CDC, 2014).

Cigarette smoking also increases the blood level of carbon monoxide which lowers blood oxygen level which could lead to damage to the heart and blood vessels (CDC, 2014).

Excess alcohol intake. Alcoholic beverages include beer, malt liquor, wine and distilled spirits such as gin, rum, vodka and whiskey (CDC, 2016).

According to the CDC (2016), a standard alcoholic drink includes 12 ounces of beer which contains 5% of alcohol, 8 ounces of malt liquor (7% alcohol content (AC)), and 5 ounces of wine (12% AC) and 1.5 ounces of distilled spirit (40% AC). Excessive alcohol consumption is heavy drinking of 15 or more drinks per week (men) and women's use of 8 or more drinks per week (CDC, 2016).

Excessive consumption of alcohol could increase the risk of HTN (CDC, 2014). Habitual use all types of alcoholic beverages are linked to higher risk of HTN. Notably, for adult women who consume more than 210 g of alcoholic beverage per week could lead to increases in BP (Akhmedjonov & Suvankulov, 2013; CDC, 2014; 2016). There is a strong correlation between alcoholic drinks (beer, vodka, and liquor) consumption and BP levels (Akhmedjonov & Suvankulov, 2013).

In fact, daily or frequent use (4–6 times a week) of vodka and beer increased the likelihood of developing HTN (Akhmedjonov & Suvankulov, 2013).

Excessive alcohol intake contributes to the high accumulation of triglycerides in the blood, which impacts lipid and blood pressure level (Wakabayashi, 2015).

High triglyceride affects the lipid accumulation product (LAP), an index determined by serum triglyceride levels and waist circumference, and LAP has been shown to predict hypertension (Wakabayashi, 2015).

Sleep disturbance. Insufficient sleep increases a person's risk of developing chronic diseases such as HTN (Institute of Medicine, 2006; CDC, 2015).

Insomnia and obstructive sleep apnea(OSA) are the forms of sleep disturbance linked with HTN (Meng, Zheng&Hui, 2013).Insomnia may be characterized by difficulties falling asleep or staying asleep which could lead to daytime fatigue and exhaustion (Meng et al., 2013; CDC, 2015). Often, sleep disturbance or deprivation may be as a result of other psychological stressors (CDC, 2015; Meng et al., 2013).

Meta-analysis report showed that short sleep duration, sleep continuity disturbance, early morning awakening and combined symptoms of insomnia increased the risk of HTN (Meng et al., 2013).

Additional contributing factors in immigrant populations. In addition to the contributing factors that are active in the general population, several factors are especially active in immigrant communities. These factors affecting immigrant communities include stress, access to health resources, length of residence and health literacy.

Stress. There are associations between chronic psychological stress among immigrants and HTN (Zlotnic et al., 2015).

A significant BP response to a high level of mental pressure increases the risk of developing HTN (Zlotnic et al., 2015; National Institute for Occupational Safety and Health [NIOSH], 2016). The inability to cope with a high level of mental stress also affects compliance with BP medications and suggest that certain personality traits and temperaments, such as a hostile or impatient disposition, may increase the risk of HTN. Mental stress may also be accentuated by an individual's personality features such as impatience, anxiety and depression and 'Type A' behavior patterns (Crump et al., 2016). Women recovering from post-traumatic stress disorder, and individuals with low resilience to psychosocial stress at a younger age, may be more likely to develop HTN in early adult life (Sumner et al., 2016; Crump et al., 2016).

Other environmental sources of psychosocial stressors include a hostile childhood family environment, adverse stressful working environment (Sumner et al., 2016) and chronic financial stress (Crump et al., 2016). Immigrants in the US believe that chronic mental stressors are the primary cause of their HTN (Ike et al., 2010). Daily psychological stressors that immigrants experience may include socioeconomic and acculturation-related challenges. For example, immigrants experience racial discrimination, lack of jobs, unaffordable healthcare cost, and language barrier (Krieger et al., 2011).

The hostile environment where immigrants experience insults from others with racial prejudice towards them could trigger anticipation of discrimination resulting in high level of mental stress (Hicken, Lee, Morenoff, House & Williams, 2014). Immigrant women living in the United States experience psychological and socioeconomic stress in their efforts to provide for their families in the United States and abroad (Yi et al., 2014; Fang et al., 2012). It appears the newer FBAI are not able to acclimatize or assimilate into the 'new' US culture as quickly as other non-AA immigrants in the United States (Yi et al., 2014).

Poor access to health resources. In underserved ethnic groups, the problem of health care access and ability to afford out-of-pocket BP medications may be reasons for not adhering to treatment (CDC, 2015). The immigrant women's experiences with health care services available to them may provide insight into their level of access to health. Lack of accessible health care may ultimately impact their ability to afford medical expenditure (CDC, 2015). Lack of health insurance has been reported as one of the reasons for poor management of HTN among immigrants (Commodore-Mensah et al., 2016).

In the United States, immigrants experience a significantly more substantial burden on access to care than their non-minority counterparts (CDC, 2014).

Inadequate access to care may be because of a lack of health insurance (Yarova, Covan & Fugate-Whitlock, 2013) and among non-Hispanic Blacks, this is one of the reasons for the high prevalence rate of HTN (Amante, Hogan, Pagoto, English & Lapane, 2015). Another explanation for poor access could be a lack of reliable social support and challenges integrating into the new American health system (Stewart et al., 2010).

Immigrant women arrive in the U.S without the resources to address their health needs because they often do not know where to access such services (CDC, 2016; Wall, Hannan & Wright, 2014). Weaknesses in health billing systems is also an access challenge that affects minority groups seeking hypertension care (Maimaris et al., 2013). Immigrants who do not have regular medical insurance coverage are less likely to have a medical screening, follow-up care, and pharmacologic treatment for HTN (Maimaris et al., 2013). An increasing number of Black immigrant women with poor access to care in the United States resort to HTN treatment advice from the internet (Amante, Hogan, Pagoto, English & Lapane, 2015), Some apply 'alternative remedies' such as herbs from their countries of birth (Sanson et al., 2016).

Length of residence. Historically, researchers have reported "immigrant health effect" referred to as the overall diminishing quality of health among immigrants with the more extended stay as they acclimatize and adjust to foreign country lifestyle (Zlotnick et al., 2015). There seems to be an interaction between self-reported HTN and acculturation or length of residence/ stay (O'Connor et al., 2014; Commodore-Mensah et al., 2016).

The risk of developing HTN among US immigrants increases with a more extended stay in the United States (Commodore-Mensah, Samuel, Dennison-Himmelfarb & Agyemang, 2014; Commodore-Mensah. et al., 2016). There is a definite association between more extended stay in the US and high risk of HTN especially among immigrant women (Delavari et al., 2013; Lê-Scherban et al., 2016). Furthermore, immigrants that are recent residents of the US are less likely than those who have lived in the United States for a long time to qualify for subsidized health care (Boise et al., 2013; Wilson & Habecker, 2009; Nwoye, 2009 & Agbemenu, 2016).

Health illiteracy. Health illiteracy connotes a limited understanding of the causes and consequences of various diseases (Adekeye, Kimbrough, Obafemi, Strack, 2014). Immigrants may find it difficult understanding the American communication style contributed to and may need more education to navigate the American health system (Adekeye et al., 2014; Mbanaso & Crewe, 2011; Venters & Gany, 2011). The problem of health literacy among immigrants may also translate to misperception of HTN health issues (Okafor, Carter-Pokras, Picot & Zhan, 2013). The immigrants with low health literacy level may have a less accurate rating of their HTN severity than immigrants with higher health literacy level (Okafor et al., 2013).

Additional contributing factors among foreign-born African immigrants.

Cultural food preferences and dietary habits. People of African descent or African-American ethnicity exhibit strong predisposition to developing HTN (James et

al., 2014). The FBAI's cultural food preferences may be an independent contributing risk factor (Ortega, Sedki & Nayer, 2015, Aaron & Sanders, 2013; Koliaki & Katsilambros, 2013; Burrell, 2016; Foëx & Sear, 2004; Beune et al., 2006).

The FBAI cultural dietary practice include the habitual consumption of canned food, undercooked red meats, 'fufu' (a porridge of cooked mashed plantain, millet or other starchy foods), and possibly liquor, (Ortega, Sedki & Nayer, 2015, Aaron & Sanders, 2013., Koliaki & Katsilambros, 2013; Burrell, 2016).

A majority of FBAI believe that their ethnic food is healthier than the low sodium diet recommended by their health caregivers (Horowitz et al., 2004; Sewali et al., 2015). Studies have also shown that foreign-born adults consume a few fruits and vegetables and may not adhere to dietary recommendations from health providers (Hislop et al., 2008; Horowitz Tuzzio, Rojas, Monteith & Sisk, 2004). FBAI women reported challenges related to healthy dietary patterns such as children's food preferences, food insecurity, easy access to “convenience” food (Popovic-Lipovac & Strasser, 2015). It is noteworthy that FBAI that recently arrived at the United States may not be familiar with the ingredients or taste of the 'American' food and resort to their high sodium ethnic food (Venters and Gany, 2011. Gross, Anderson, Busby, Frith & Panco, 2013). The immigrants who have resided longer in the United States may resort to more affordable and widely available food which may be high sodium and of low in nutritional value (Venters and Gany, 2011; Horowitz et al., 2004; Gross et al., 2013).

African health beliefs and perceptions. Certain perceptions about HTN among minority groups may potentially influence people's attitude towards treatment and management of the disease (Kressin et al., 2007; Frosch, Kimmel & Volpp, 2008; Commodore-Mensah, Himmelfarb, Agyemang, & Sumner, 2015). For example, many African immigrants feel that a return to their countries of origin could cure their high blood pressure (Beune et al., 2006). Some Africans believe that HTN may be due to spiritual forces (i.e., witchcraft) and excessive blood in the body and may not want to discuss their HTN concerns or diagnosis with other community members to avoid social stigmas (Beune et al., 2006; Osamo & Owumi, 2010). Some FBAs also believe that reducing stress and tension is an adequate way to treat HTN, and taking medication for HTN may not be necessary (Frosch et al., 2008; Schlomann & Schmitke, 2007).

Pathophysiology of Hypertension

Despite significant advances in research that explains the HTN disease process, much of the pathophysiologic process remains unknown (Edwards, Patel & DiPette, 2016). However, the central mechanisms in the pathophysiology of HTN are known.

The pathophysiologic process includes increase systemic vascular resistance, reduced responsiveness to stimuli as a result of excess sodium or salt (Klimczak, Jazdzewski & Kuch, 2016; Foëx & Sear, 2004; Burrel, 2016).

These pathophysiologic changes result in extracellular fluid volume expansion, and sympathetic over-activation (Klimczak et al., 2016; Foëx & Sear, 2004; Burrel, 2016). Consequently, there is endothelial dysregulation, vascular smooth muscle dysfunction, increased oxidative stress, sympathetic nervous system activation and altered renin-angiotensin-aldosterone regulatory activity (Klimczak et al., 2016; Foëx and Sear, 2004; Burrel, 2016). Some studies reported the role of dietary salt intake, activation of neuro-humoral systems, renal dysfunction/vascular remodeling, and inflammation (Edwards et al., 2016; Safar et al., 2009, O'Shaughnessy & Karet, 2006).

Excess Sodium and Renal Function. High sodium or salt intake alters endothelial dysfunction, cardiovascular function resulting in high BP, kidney disease, cardiovascular morbidity, and mortality (Koliaki & Katsilambros, 2013; Boegehold, 2013; Aaron & Sanders, 2013). In adults with normal BP, the increased renal perfusion pressure leads to increased excretion of sodium and fluid (Aslanger et al., 2016).

In those with primary HTN, there is a functional impairment in the mechanism of renal sodium excretion and volume regulation (Koliaki & Katsilambros, 2013; Aslanger, Sezer & Umman, 2016). In resistant HTN there are enzymatic activities associated with the renal sodium and fluid excretion process (Aslanger et al., 2016). Excess sodium in the blood causes an extracellular volume expansion and overactivation of the sympathetic nervous system and renin-angiotensin-aldosterone (Koliaki & Katsilambros, 2013).

Abnormalities in sodium excretion resulting from a decrease in renal blood flow lead to disturbance in the sodium-water exchange mechanism cause an increase in intracellular water and sodium retention (Koliaki & Katsilambros, 2013). Sodium and water retention increase vascular smooth muscle tone or vascular remodeling that results in an increase in systemic vascular resistance and elevation of BP (Koliaki & Katsilambros, 2013).

Increased sodium consumption promotes intravascular fluid volume expansion and vascular dysfunction, leading to the rise in BP (Koliaki & Katsilambros, 2013).

Sympathetic nervous system regulation of blood pressure. The sympathetic neurogenic autonomic nervous system plays a vital role in the control of BP (Klimczak et al., 2016; Foëx & Sear, 2004). The sympathetic nervous system regulatory control of BP is a complex process that involves neuro-receptors in the vasomotor center in the dorsal and ventral medulla, the pons and midbrain (Klimczak et al., 2016; Foëx & Sear, 2004). The endothelial dysfunction in people with HTN may be due to a low level of Nitric oxide, a neurotransmitter that regulates BP by mediating the actions of endothelial vasoconstrictors released in the body (Klimczak et al., 2016; Foëx & Sear, 2004). These vasoconstrictors include nor-epinephrine (Klimczak et al., 2016; Foëx & Sear, 2004).

In HTN patients, there is an increased level of vasoconstrictor and increased responsiveness to stressful stimuli and decreased sensitivity of baroreceptors (Klimczak et al., 2016; Foëx & Sear, 2004).

Abnormal arterial baro-receptors' response to vessel wall distension decreases the afferent impulse activity which ultimately increases the efferent sympathetic activity and increases vagal tone resulting in vasoconstriction and elevation of BP (Klimczak et al., 2016; Foëx & Sear, 2004).

Remodeling and endothelial inflammation. The β and α -adrenoceptor stimulation control the secretion of renin a protein secreted by the kidney (Burrell, 2016; Foëx & Sear, 2004). The renin combines with angiotensin in the blood to form angiotensin I. Then, angiotensin I converts to angiotensin II (a vasoconstrictor) by the angiotensin-converting enzyme (ACE). The conversion occurs through the renin-angiotensin-aldosterone system (RAAS) which controls the renal perfusion pressure and the sodium concentration in the distal tubular fluid and suppresses the renin secretion via a negative feedback loop (Burrell, 2016; Foëx & Sear, 2004).

In people with HTN, there is over activity of the RAAS (Burrell, 2016; Foëx & Sear, 2004). Over-activity of RAAS triggers overstretching of the endothelial system leading to release of inflammatory markers and processes associated with mechanical and humoral modulation (Savoia & Schiffrin, 2006; Kobalava, 2016). Such inflammatory responses result in extracellular matrix deposition that remodels the vascular lining leading to increased peripheral vascular resistance to blood flow and increases in BP (Savoia & Schiffrin, 2006; Kobalava, 2016).

Immigrants from WA believed that HTN might be either a 'natural' or 'created' condition (Beune et al.; 2006). The way patients explain the cause of HTN may provide helpful information for their understanding of the pathophysiological mechanism which may contribute to their view about treatment modalities (Agyei et al., 2014).

Screening and Diagnosis

Guidelines. The USPSTF screening recommends annual BP check for non-pregnant adults' above 18 years who are at increased risk for high BP (Piper et al., 2015; Siu, 2015). Adults between 18 to 39 years with normal blood pressure (<130/85 mm Hg) without risk factors should have re-screening for HTN every 3 to 5 years (USPSTF, 2016). A manual or automated sphygmomanometer is used in the screening or measurement of BP (USPSTF, 2016). High level of physical activity and emotional stress, certain medications, caffeine, and nicotine consumption may affect BP values at a given time (Piper et al., 2015; Siu 2015).

Some experts recommend that single elevated BP value is insufficient for accurate screening for HTN (Siu, 2015; Myers, Kaczorowski, Dawes, & Godwin, 2014; Kario, 2014).

Diagnosis. According to the U.S. Preventive Services Task Force (USPSTF), BP screening is the initial step in the diagnosis of HTN. BP could be measured at home but is done commonly by a health worker at an outpatient office setting (USPSTF, 2016).

In order to prevent measurement errors, health care providers should obtain BP measurements outside of the clinical setting for diagnostic confirmation of HTN before starting treatment (Piper et al., 2015). Whence, the ambulatory BP monitoring ABPM (24-hour, daytime, or nighttime) is the standard for noninvasive BP measurements (Piper et al., 2015). The ABPM is also a better predictor of long-term HTN outcomes than office BP measurement (OBPM) with a manual sphygmomanometer (Piper et al., 2015). Therefore, the expert recommendation is to confirm BP elevation above 140/90 mmHg noted in the office with either a twenty-four-hour ABPM or a home BP monitoring (HBPM) taken on three separate days (USPSTF, 2016; NHLBI, 2015).

Home Blood Pressure Measurement. The technique for home blood pressure measurement (HBPM) should be similar to measurement of BP in the health care providers' office. According to Egan, Zhao, Axon (2010) patient should maintain the same posture during the initial and follow-up BP measurements. The patient should be in a quiet and warm setting, in sitting position with the back supported for five minutes and the arm supported at the level of the heart (Egan et al., 2010).

The upper arm and appropriate cuff size should be used during measurement (NHLBI, n. d. & 2015; Niessen et al., 2014). Initial check should also include measurement while in a supine position after 5 minutes of rest (Egan et al., 2010). Additional BP measurement of patients with diabetes, above 65 years, or those taking antihypertensive drugs should be taken after 2 minutes while standing (Egan et al., 2010).

BP measurement should be done when the individual is relaxed, not in a hurry and has not had alcohol, caffeine or tobacco 30-60 minutes prior to measurement (NHLBI, n. d. & 2015; Niessen et al., 2014). Patients should not take stimulants such as phenylephrine in decongestants and eye drops used for dilating the pupil for 30-60 minutes before BP check (NHLBI, n. d. & 2015; Niessen et al., 2014).

The BP cuffs used for HBPM should be compliant with standards of sphygmomanometer set by the Association for the Advancement of Medical Instrumentation (Alpert, Friedman & Osborn, 2010; Balestrieri & Rapuano, 2009). The length of the cuff bladder should be 80%, and the width should be at least 40% of the circumference of the upper arm. The gauges of the device should be calibrated every six months against a mercury manometer. To confirm readings, multiple values should be obtained from the patient. According to Egan et al (2010) a minimum of two readings should be taken on each visit, separated by as much time as possible; three readings at least 1 week apart for diagnosis of HTN.

Initially, take BP in both arms; if pressures differ, use the higher arm. If the arm pressure is elevated, especially in patients under age 30 years, BP should be rechecked in one leg.

Several BP measuring devices have been designed and recommended for HBPM such as the Omron RS6® (Azaki, Diab, Harb, Asmar & Chahine, 2017). However, the accuracy of using home devices vary in people who are obese (Azaki et al., 2017).

According to (Niessen et al., 2014), home BP machine is convenient and affordable, and a reliable method of monitoring BP status in people with HTN. Personnel without healthcare experience may use HBPM (Nwankwo et al., 2016). However, patients need to take their device to their health provider for best advice on use and correlation of home readings as commercial devices may not be well calibrated and as reliable as office devices (Nwankwo et al., 2016).

Office blood pressure measurement. Elevated BP values on two HBPM suggests further follow-up BP measurement by a health personnel preferably in a health clinic (Niessen et al., 2014). Clinicians and health care providers should consider automated office blood pressure as an alternative to manual BP measurement when screening for HTN (Myers et al., 2014; Kario, 2014). Furthermore, research studies support using two BP values obtained while the patient is in a sitting position after resting for at least 5 minutes in the clinician's office (USPSTF, 2016; Egan, Zhao & Axon, 2010).

Blood pressure measurement should be conducted by a clinician or healthcare personnel with a well-calibrated machine and a cuff that is appropriate for the size of the upper arm and positioned at the level of the heart during measurement (USPSTF, 2016; Egan et al., 2010). The clinician inflates the bladder quickly to 20 mmHg above the systolic pressure as estimated from loss of radial pulse, then deflate the bladder by three mmHg per second and record the disappearance of the pulse (Korotkoff sounds) as the diastolic pressure (Egan et al., 2010).

If the Korotkoff sounds are weak, the clinician instructs the patient raise the arm, open and close the hand 5 to 10 times, and then inflate the bladder quickly (Egan et al., 2010). Documentation and recording of patients ‘should include position, arm, cuff size: example, 140/90, seated, right arm, large adult cuff (Egan et al., 2010).

The next step in the diagnostic process after BP measurement is obtaining comprehensive history, physical examination, and routine blood chemistries (USPSTF, 2016; Piper et al., 2015). The detailed medical history includes personal and family history of HTN, heart or kidney disease (James et al., 2014). It also explores the use of prescription medications, nonprescription non-steroidal anti-inflammatory agents (NSAIDs), alcohol consumption and other risk factors (USPSTF, 2016; Piper et al., 2015). The initial BP screening tests may also include checking for electrolytes and serum creatinine, fasting glucose, urinalysis, lipid profile, plain chest x-ray, and electrocardiogram (Piper et al., 2015; NHLBI, 2015).

Prevention of Hypertension

Lifestyle modifications and culturally sensitive health education have been useful in the prevention of HTN (Koliaki & Katsilambros, 2013). Such lifestyle modification includes healthy habits of dietary salt restriction, regular physical exercise, and limiting alcohol consumption (James et al. 2014).

The effectiveness of these lifestyle modifications varies among various racial backgrounds and prevention strategy (Koliaki & Katsilambros, 2013). For example, education curriculum could be tailored to the cultural needs of immigrants (Koniak-Griffin & Brecht, 2015; Hurtado et al., 2014).

HTN educational intervention plans should incorporate culturally appropriate evidence-based stress-relieving measures that immigrants use (Schlomann & Schmitke, 2007). The use of Health promoters (HP) for community health intervention has been a popular approach in Latino immigrant population for decades (Sánchez et al., 2014). So, dietary and nutritional counseling about low salt diet and education to increase physical activity could be facilitated and delivered by HP who may also be health care members among the immigrant community (Koniak-Griffin & Brecht, 2015; Hurtado et al., 2014).

Health education. Health education is relevant for prevention and treatment of HTN in FBAI population (Schlomann & Schmitke, 2007). Based on the evidence in the literature, the interventions that have been successful with immigrants include culturally-appropriate group-based educational interventions (Koniak-Griffin & Brecht, 2015; Hurtado et al., 2014). Another form of educational intervention that showed to be effective HTN prevention strategy among various minority immigrant groups includes telehealth approach that utilized culturally competent nurse counseling calls (Li & Lai, 2016).

The model of efficient health education delivery in literature comprised of an instructional manual designed to build knowledge and skills to achieve hypertension prevention behaviors (Koniak-Griffin & Brecht, 2015; Hurtado et al., 2014).

The HTN education curriculum should combine physical activity classes with DVD illustration of low sodium, sodium free, or no salt added food label (Koniak-Griffin & Brecht, 2015; Hurtado et al., 2014). The educational sessions may include cultural and language-appropriate presentations as well as other educational materials (Koniak-Griffin & Brecht, 2015; Hurtado et al., 2014). The instructional materials which included scripts, picture cards, and flip charts translated to community member's language (Khare, Cursio, Locklin, and Bates & Loo 2014).

The educational intervention could also incorporate interactive group activities that include hands-on demonstrations, role-playing. The participants may even have supplemental handouts, recipes, exercise DVD (Khare et al., 2014; Hurtado et al., 2014). A successful health education program model targeted at West African immigrants in the Bronx used educational materials, group education sessions, and focused individual counseling (Dover Wilson & Elgoghail, 2016). Health educational interventions to FBAI experiencing HTN should employ persuasive communication strategies useful in dispelling the myth and misconception of the condition (Schlomann & Schmitke, 2007). Community-based health education programs may also be helpful because they are locally accessible and often free or reduced charges.

Some of the educational strategies in the management of HTN patients who may not afford regular access to care include interactive educational workshops and programs that integrate social media and other advanced communication technologies (Lu et al., 2015; Logan, 2014). Interactive education workshops may be a useful instructional strategy for educating FBAI, who may not be able to afford or understand the modern educational application (Lu et al., 2015). Education programs for FBAI need to consider targeting their health providers (HP) and should emphasize culturally sensitive strategies that could help in addressing their peculiar unhealthy beliefs and behavior (Gross et al., 2013).

The HP could participate in community-based BP checking during educational, church or other cultural events (Ndikum-Moffor et al., 2015). Today's HP also uses social media campaigns as well as the more traditional methods of posting flyers at local churches, grocery stores, hair salons, and community organizations to increase HTN awareness in the community (Ndikum-Moffor et al., 2015). These educational strategies can be applied to immigrant women from Africa (Ndikum-Moffor et al., 2015). The door-to-door HTN awareness campaign with BP screening and dissemination of information about resources available in the community can result in a more efficient self-management of HTN (Sánchez et al., 2014).

Dietary salt restriction. Modest salt restriction with a simultaneous increase in dietary potassium is an effective strategy to prevent or control hypertension and decrease cardiovascular morbidity and mortality (Aaron & Sanders, 2013). Experts recommend a proactive stringent salt reductions, particularly in potentially salt-sensitive individuals (Aaron & Sanders, 2013). As stated by Aaron and Sanders (2013) one of the healthy diet plans that promote low-salt diet is Dietary Approaches to Stop Hypertension (DASH).

The DASH diet includes vegetables, fruits, low-fat dairy products, whole grains, poultry, fish, and nuts; and low sweets, sugar-sweetened beverages, and red meats (Aaron & Sanders, 2013). The DASH dietary pattern is rich in potassium, magnesium, calcium, protein, and fiber, but low in saturated fat, total fat, and cholesterol (Aaron & Sanders, 2013). It promotes an eating plan that based on consuming plant-based meals consisting of fruits, vegetables, whole grains, and other foods that are low in salt/sodium and cholesterol (Aaron & Sanders, 2013).

Tobacco cessation. Tobacco cessation can significantly lower your systolic blood pressure and avoiding the use of tobacco has been associated with lower risk of HTN (D'Elia et al., 2014). Strategies for promoting tobacco use cessation include minimizing secondhand smoke exposure preventing initial tobacco use, communication interventions and initiatives to motivate those ready to quit (Samadian, Dalili & Jamalian, 2016; National Cancer Institute[NCI], n. d.).

Such innovative interventions include as smoke free texting programs, using nicotine replacement therapy, speaking to an expert, using smoke-free Apps (NCI, n. d).

Weight loss and exercise. Regular exercise and moderate weight loss are significant lifestyle changes for controlling HTN (Lagan and Jones, 2015). Experts recommend moderate aerobic and dynamic resistance exercise regimen to reduce BP (Millar, McGowan, Cornelissen, Araujo & Swaine, 2014). Some authors have reported that African immigrants with a diagnosis of HTN engaged in regular physical exercise, regardless of their length of stay in the United States, English proficiency, income and health insurance status (Sewali et al., 2015). However, FBAI women with HTN should engage in supervised moderate to intense physical exercise every day of the week for at least 30 minutes.

Limit alcohol intake. In the United States, a standard alcoholic drink contains 0.6 ounces (14.0 grams or 1.2 tablespoons) of pure alcohol. (CDC, 2016). Various forms of alcoholic beverage include beer, liquor, wine, distilled spirits such as gin, rum, vodka, whiskey (CDC, 2016). Binge drinking (consumption of 4 or more drinks in a single occasion) and heavy drinking (8 or more drinks a week or five or more drinks on occasion for men or 4 or more drinks on occasion for women (CDC, 2016; 2017).

Moderate alcohol consumption by limiting daily alcohol intake to one drink for women or two drinks for men per day has shown to prevent HTN (CDC, 2016; 2017; Samadian et al., 2016).

Early identification of excessive alcohol use through routine screening of alcohol intake and brief intervention in general practice can help to improve the management of patients with HTN (Collart et al., 2015). Monitoring alcohol consumption in a population of excessive drinkers was also effective in reducing SBP on a long-term basis (Collart et al., 2015).

Treatment of Hypertension

Treatment of HTN comprises lifestyle modification – as summarized in Prevention above -and pharmacological treatment (James et al., 2014).

To reduce the incidence of stroke, heart failure, and coronary heart disease events in the older adult population 60 years and older, the target BP treatment goal is less or equal to 150/90 mm Hg (James et al., 2014; Wright et al., 2014). Similarly, to reduce overall mortality from HTN, the target DBP for younger adults should be between 90/50-140/90 mm Hg (James et al., 2014). A BP treatment goal of less than 140/90 has also been applied to older adults above 60 years with diabetes mellitus or chronic kidney disease with little evidence of serious harm to patients (Wright et al., 2014).

Pharmacological therapies. Pharmacological or drug therapy is indicated when lifestyle measures are not sufficient or when there is a delay in diagnosis of hypertension and patient is already at a late stage at initial diagnosis (James et al., 2014). There are several reasons for inadequate treatment for HTN among the general population who may have adequate health coverage.

Many patients are not able to fill their BP medicine prescription and may not be able to afford their medications (CDC, 2016). Also, people with HTN often may not have visible, noticeable or bothersome symptoms that would propel them to take their medications or refill prescriptions on time (CDC, 2016). Older adults may have multiple medications and may find it challenging to remember when to take their pills (CDC, 2016). The unwanted effects of BP medicines may also facilitate missing pills for convenience sake and to prolong unpleasant side effects (CDC, 2016). Primary care clinicians should prescribe generic combination medicines and allow 90-day refills for the same date to facilitate compliance with medication regimen (CDC, 2016).

There are four major categories of medications used in the initial treatment of HTN as monotherapy. They include diuretics, calcium channel blockers (CCB), Angiotensin-converting enzyme inhibitors (ACEI) and Angiotensin II receptor blockers (ARBs) (James et al., 2014). Other common hypertensive medications include α -adrenoceptor blockers, combined α and β blockers, direct vasodilators, and some centrally acting drugs such as α_2 -adrenoceptor agonists and imidazoline receptor agonists (James et al., 2014).

Diuretics. Diuretics are drugs that facilitate renal excretion of excess sodium and include three groups namely- thiazides, loop, and potassium-sparing diuretics (Nguyen, Dominguez, Nguyen & Gullapalli, 2010; James et al., 2014). Thiazides control BP by inhibiting the absorption of sodium chloride in the distal convoluted tubule of the kidney.

However, loop diuretics selectively impede the sodium-potassium-chloride in the ascending loop of Henle resulting in the lowering re-absorption of sodium chloride in the kidney.

Low-dose diuretic therapy is effective and reduces the risk of complications. Potassium-sparing diuretics decrease sodium re-absorption by acting on distal and cortical collecting tubules, thereby blocking aldosterone receptors (James et al., 2014). Diuretics are often used in combination drugs and even in small doses diuretics potentiate other antihypertensive drugs (Nguyen et al., 2010; James et al., 2014). The potassium-sparing diuretics such as spironolactone reduce morbidity and mortality in patients with heart failure and reduce the risk of sudden death (Nguyen et al., 2010; James et al., 2014).

Beta-blockers. *B-blockers* lower BP by inhibiting the effect of beta-1 adrenergic receptors resulting in slower heart rate decreased cardiac contraction and cardiac output (Nguyen et al., 2010; James et al., 2014). They are appropriate and beneficial in patients with high sympathetic tone, angina, and acute or previous myocardial infarction, mainly when used in addition to a diuretic or a calcium channel blocker (Nguyen et al., 2010; James et al., 2014). Common unpleasant side effects include fatigue, depression, and sexual dysfunction; using low dose blockers minimize the side effects (Nguyen et al., 2010; James et al., 2014).

Angiotensin-converting enzyme inhibitors. The ACEI control BP by inhibiting the conversion of angiotensin 1 to the active vasoconstrictor known as Angiotensin 11 (Nguyen et al., 2010; James et al., 2014). The ACEI includes and is used in patients with heart disease following history of heart attacks (Nguyen et al., 2010; James et al., 2014). The ACEI are cost-effective and considered first-line treatment before consideration of ARBS (Nguyen et al., 2010; James et al., 2014).

Angiotensin II receptor blockers. The ARBs exert their BP lowering action by preventing angiotensin 11 from binding to its receptor that produces vasoconstriction and fluid retention (Nguyen et al. 2010; James et al. 2014). They are considered alternative in patients allergic or intolerant to ACEI. Examples include Avapro, Micardis, Diovan (Nguyen et al., 2010; James et al., 2014).

Calcium channel blockers. Calcium channel blockers include two classes: 1) dihydropyridines that act on peripheral blood vessels and 2) non-dihydropyridines that act on both cardiac muscles and peripheral blood vessels (Nguyen et al., 2010; James et al., 2014). The CCB lower BP by preventing the influx of calcium into vascular smooth muscles, resulting in vasodilatation and reduced vascular contraction (Nguyen et al., 2010; James et al., 2014). The non-dihydropyridines include cardiazem and verapamil. The dihydropyridine includes norvasc, plendil, adalat (Nguyen et al., 2010; James et al., 2014). The long-acting calcium channel blockers such as norvasc are often used as initial monotherapy treatment (Nguyen et al., 2010; James et al., 2014).

The combination of CCB and diuretics also are also preferred first-line treatment for HTN in black patients (Lagan and Jones, 2015).

Inpatient with a recent diagnosis of HTN, initial treatment should be single antihypertensive, however, if BP is higher than 20/10 above goal clinicians could add a second drug with a complimentary BP lowering effect before considering the maximum dose to recommend for the first drug of choice (CDC, 2015).

The recent recommendation is to limit first-line treatments to thiazide-type diuretics, calcium channel blockers (CCBs), ACEIs, and ARBs). Clinicians should consider the patient's general health, race, co-morbid conditions, postural blood pressure changes, the number of medications needed to reach the goal, in determining the first drug of choice and individual's target BP treatment goal. Some patients may need 2 or more BP medications to achieve optimal BP control (James et al., 2014).

First-line treatment may include combination medications in patients with HTN with BP > 20/10 mmHg above target goal, at initial diagnosis (Nguyen et al., 2010; James et al., 2014). The initial medication of choice for nonblack patients consists of a thiazide diuretic, a calcium-channel blocker, (ACEI), or ARB (James et al., 2014; USPSTF, 2016). The first line medications of choice for black patients, initial include thiazide or a CCB (USPSTF, 2016). Sometimes, high doses or combinations of ACEIs, ARBs, thiazide-type diuretics and CCBs could also be as second and third-line alternatives (James et al., 2014).

Two or more medications may be necessary to achieve BP target goal for patients with CKD an ACEI or an angiotensin-receptor blocker (James et al., 2014).

The target BP level for patients 60 years of age or older who do not have DM or chronic kidney disease (CKD) is <150/90 mmHg (James et al., 2014).

In patients, 18 to 59 years of age without significant co-morbidities, and in patients 60 years of age or older who have DM, CKD, or both conditions, the BP level to target in treatment is <140/90 mmHg (James et al., 2014). Other medications for further treatment are Beta-blockers, Alpha-blockers. They include Alpha1/beta-blockers such as carvedilol, vasodilating beta-blockers such as nebivolol, central alpha2-adrenergic agonists like clonidine, and direct vasodilators (example, hydralazine). Others include loop diuretics such as furosemide, aldosterone antagonists (such as spironolactone) and peripherally acting adrenergic antagonists such as reserpine (James et al., 2014).

ACEIS should not be the initial choice of treatment for patients of African descent that have no chronic kidney disease, initial preferable therapy for HTN should be CCBs and thiazides (James et al. 2014). ACEIs and ARBs could be used as first-line therapy or in addition to first-line treatment but should not be used simultaneously in the same patient (James et al., 2014). In patients over the age of 75 with impaired kidney function, CCBs and thiazide-type diuretics should be used instead of ACEIs and ARBs (James et al., 2014).

CCBs and thiazide diuretics help to reduce the risk of hyperkalemia, increased creatinine, and further renal damage (James et al., 2014). The actions of all anti-hypertensive medications are either to decrease the cardiac output, the peripheral vascular resistance, or both (James et al., 2014).

The most recent groups of antihypertensive agents such as ACEI and ARBS are as effective as the older ones such as diuretics and β -blockers (James et al., 2014).

Common medications used in the treatment of HTN as described in the literature have various side effects (Tavares & da Silva, 2013). These potential side effects include fatigue, frequent urination, erectile problems, cough and dizziness (James et al., 2014). Cultural programs that advocate safe use of these various medications at the community level may encourage FBAI to follow medication guidelines from their health provider (Coulon et al., 2016).

HTN Treatment in Foreign-born African Immigrants

Pharmacological treatments. There is no specific treatment model for FBAI population; however, the JNC8 guidelines favor the use of certain BP-lowering medications in black patients (James et al., 2014). These medicines include thiazide-type diuretic, CCB, and ACE inhibitors (James et al., 2014). The initial antihypertensive therapy with single-pill combinations produced more rapid blood pressure control (Ortega et al., 2015; CDC, 2016).

Non-pharmacological treatments. Regular exercise and weight loss are also useful in lowering blood pressure (Campbell, Rodríguez, Nowakowski & Gotrace, 2016), though they may not be recognized by FBAI women as a BP control measure (Buene, 2006). Culturally, family values, strong social support or network, positive healthcare experiences, and emotional support of women are tools that promote HTN control within the health system (Sanon et al., 2016; Campbell et al., 2015; Tavares & da Silva, 2013). Perceptions of stressors related to the female role at home may be a part of the FBAI community HTN prevention programs (Tavares & da Silva, 2013). Socio-economic, environmental factors could mediate between the community-level influences and perceptions that affect BP (Coulon et al., 2016). Neighborhood poverty and safety concerns about the crime rate in the neighborhood have also been linked to higher systolic and diastolic BP (Coulon et al., 2016). FBAI women who are willing to exercise could be given vouchers as incentives for participation in supervised exercise in the Neighborhood Park or gym (Coulon et al., 2016).

Herbal and other alternative treatments. The use of complementary and alternative medicine (CAM) is a common practice among immigrants (Choi, Han, Na & Lim, 2017). There is evidence that herbal remedies are sometimes useful in lowering BP in people with HTN (Choi et al., 2017).

Judicious use of CAM, including plants and herbs as food and dietary supplements, especially when combined with lifestyle changes such as exercise are effective in controlling hypertension, is recommended (Anwar, Al Disi & Eid, 2016; Al Disi, Anwar & Eid, 2015; Choi et al., 2017).

Plant and food products such as cocoa, coenzyme Q10, garlic and fish oil (omega-3 fatty acids) showed promising results in reducing blood pressure when used as part of a lifestyle-modification toolkit (Anwar et al., 2016., Ng, Liang & Gagliardi, 2016; NCCAM, 2016). Judicious use of common herbs such as celery, hibiscus flower tea and flaxseed could improve HTN (Al Disi et al., 2015; Anwar et al., 2016; Sahebkar et al., 2015; Ursoniu, Sahebkar, Andrica, Serban, Banach, 2016). Anwar (2016) reports that other herbs with an ability to lower BP include sweet flag or calamus, mistletoe, onion, and cinnamon. Other herbal and food products are Chinese sage, lemongrass, black cumin, ginseng, ginger, Japanese thistle, makandi, dog-strangling vine, bread, cardamom (Anwar et al., 2016). As well as the Tianma, Pima cotton, Thai or black ginseng, lavender, sweet basil, tomato, sesame, and radish (Anwar et al., 2016). However, there are seasonal variations in the herbal content of flowers, seeds, leaves, and bark or roots; and the side effects or potential long-term adverse effects of these substances are not well understood (Anwar et al., 2016).

Other CAM modalities such as chiropractic massage, energy therapies, traditional Chinese medicine, acupuncture, Ayurveda, and naturotherapy, may also be helpful in lowering BP among people with hypertension (National Center for Complementary and Alternative Medicine [NCCAM], 2016; Liwa et al., 2017). Authors also claim that other CAM approaches such as meditation, dance, art, music therapy, spiritual healing, prayer, and biofeedback are also useful in lowering BP (Liwa et al., 2017. NCCAM, 2016). Other relaxation remedies used for HTN treatment include reading, doing crossword puzzles, and lying down (Schlomann & Schmitke, 2007).

Hypertension Prevention Programs

Programs for General Population. According to the US Department of Health and Human Services (HHS) Healthy People 2020, public health effort aims to promote the overall cardiovascular health of the US adults. Prevention programs should focus on activities and interventions that lower blood pressure (HHS, 2016). These HTN prevention interventions could also integrate cultural and behavioral needs of the vulnerable population. Prevention programs for HTN should include a healthy diet, getting regular physical activity, avoiding exposure to tobacco smoke, limiting alcohol and salt intake, increased fruit, and vegetable consumption, and reduced saturated fat intake (National Institute of Health [NIH] n.d). Some multimedia toolkits facilitate physical exercise for the prevention of obesity (CDC, 2016).

The CDC works with state and local partners to help connect people to places and opportunities where they can be regularly active (CDC, 2016).

Programs for Immigrant Groups. The CDC supports several public health efforts that address high blood pressure (CDC, 2014; 2015 & 2016). The programs and services include culturally appropriate and sensitive dietary and nutritional education (CDC, 2016). Other programs include Million Hearts Initiative (MHI), WISEWOMAN (Well-Integrated Screening and Evaluation for Women across the Nation), and SRCP (Sodium Reduction in Communities Program) (CDC, 2016). Million Hearts Initiative (MHI) is a federal initiative available to various immigrant groups and communities in Maryland (CDC, 2014). The goal is to prevent one million heart attacks and strokes through early identification and treatment of risk factors, and lifestyle modification (CDC, 2014: 2015).

The WISEWOMAN program serves low-income immigrant women with chronic disease aged 40-64 years who are under-insured or un-insured (CDC, 2015).

The program provides risk factor screening, lifestyle programs, and referral services to prevent cardiovascular disease (CDC, 2015). These services are available to immigrant minority population through counties, states and tribal organizations (CDC, 2015). The SRCP services help to increase minorities with HTN access to low sodium food options so that low salt food choices are a simple and easy process (CDC, 2016). The program promotes wide availability of low salt food, and products (CDC, 2016).

Making it convenient for ethnic minorities to afford and find food products that are low in sodium (CDC, 2016). Some of the SRCP local and state sodium reduction strategies include the establishment of food service guidelines and nutrition standards (CDC, 2016). Other approaches involve initiating actions that facilitate reduced sodium menu and collaborating with food distributors to increase availability and institute strategies that enable consumers to identify and select lower sodium products (CDC, 2016). The SRCP programs also provide the public with complementary consumer guide and information (CDC, 2016).

Improving access to health care. One of the programs that could be beneficial to addressing access to care problem in the immigrants is the Racial and Ethnic Approaches to Community Health (REACH). REACH is a national program to reduce racial and ethnic health disparities through the provision of funds to state and local health departments, tribes, universities, and community-based organizations (CDC, 2015; 2016). Innovative culturally appropriate programs promote hypertension awareness and prevention in AA communities (CDC, 2015; 2016).

The reduction of medication co-payments in health insurance plans may improve HTN control and treatment adherence in the United States (Maimaris et al., 2013). Furthermore, the multidisciplinary healthcare team should be involved at several points of immigrants' HTN treatment.

The team those immigrants that may not be able to afford high co-pays and deductibles for office visits; clinical practices and refer them to safety-net centers and services available for the patients to receive free or affordable care (CDC, 2016). Ensuring that immigrants understand appropriate sites to search for accurate and reliable health information resources that are publicly available online could help those having difficulty accessing online healthcare services information (Amante et al., 2015). It is also paramount for health care providers(HCP) in private practices that serve immigrant communities to consider adoption of electronic health record (EHR) in primary health care (Wall et al., 2014).

Health care professionals need to integrate automated algorithms into their electronic health record (EHR) to help them identify and treat patients in their practices with multiple chronic illnesses that include HTN. Also, adopting a systematic plan for screening patients potentially at risk for hypertension can ensure timely follow-up with the treating clinician (Wall et al., 2014). Furthermore, develop a standardized plan of care patients with established diagnosis of HTN that included at least monthly feedback to the clinical care team to help patients achieve and maintain adequate BP control (Wall et al., 2014).

Programs for Foreign-born African Immigrants. HTN prevention programs that target FBAI women need to address the cultural and dietary food practices (Yi et al., 2014).

They also need to address several sociocultural factors that disproportionately influence HTN management in the population (Yi et al., 2014). These factors and practices would likely include (a) evident-based use of herbal medicines for self-management and treatment of HTN; (b) cultural leisure activities for relaxation; such as reading, doing crossword puzzles, and lying down (Schlomann & Schmitke, 2007); (c) navigating challenges related to accessible and affordable healthy African food (Yi et al., 2014). Other HTN prevention programs include culturally appropriate health education that integrates culturally sensitive communication practices that could potentially influence FBAI's cultural perceptions about HTN management. Such prevention programs could incorporate participation of the women and their families to enhance long-term sustainable health education efforts and community commitments (Kreps & Sparks, 2008).

Public Health Implications of Ethnic Hypertension Disparities

The United States is a nation of immigrants of diverse African ancestry, and the ethnic trends of high prevalence of HTN among African Americans have been evident in literature for many years (Hyman, Ogbonnaya, Pavlik, Poston & Ho, 1999). Understanding the role of diversity in disease, and developing screening and prevention programs that take this difference into account continue to be a public health challenge (White et al., 2011 & 2012). FBAI reside in a diverse neighborhood in cities, suburbs, and rural areas (White et al., 2011 & 2012).

The medical cost of caring for immigrants members who resort to emergency care for complications of HTN contributes to increasing public health expenditure (White et al., 2012).

The lack of equitable allocation of resources for public health measures results in FBAI communities resorting to emergency care for conventional treatment (White et al., 2012). Innovative interventions to address sociocultural issues linked with the FBAI experience of segregation and discrimination may improve mental wellbeing and HTN status (White et al., 2011). Although the literature shows that FBAI from West Africa aspires to a high level of education, a significant number are older at immigration and have less than 12 years of schooling (Okafor et al., 2013). Acculturation and lack of socioeconomic empowerment may militate against their achieving adequate HTN control or adopting prevention measures (Okafor et al., 2013).

Many African immigrants use complementary and alternative medicine in the treatment of HTN (Hughes, Aboyade, Clark & Puoane, 2013; Osamo & Owumi, 2010). The use of CAM for self-treatment of HTN is particularly prevalent in those without health insurance coverage, who tend to self-treat with herbs and other home remedies (Frosch et al., 2008). The lack of improved quality control among consumers, lack of defined expiration date and lack of data on herb-herb interactions deserves public health attention (Al Disi et al., 2015; Anwar et al., 2016).

Public health interventions should also include a measure to support pre-migration HTN awareness and provision of linguistically competent interventions for African immigrant women at risk for poor HTN health outcomes (Okafor et al. 2013).

There may be other unmeasured cultural, lifestyle, and environmental differences between African immigrants and U.S.-born African Americans that may contribute to better HTN management (Campbell et al., 2015). Perhaps, health providers serving the African-born American women may need to explore how those cultural, behavioral, environmental resources and assets could be tailored to promote adequate HTN self-management (Campbell et al., 2015).

Access to BP machines for screening and affordable prevention measures, appropriate follow-up are essential steps in saving lives, reducing disability and lowering costs for medical care (CDC, 2016). Public health practitioners need to sponsor public health initiatives and programs that involve small FBAI community groups to help create the awareness of HTN screening and treatment resources in the community (Tavares & da Silva, 2013. CDC, 2016). Such interventions should incorporate perspectives and participation of the women and their families to enhance long-term sustainable health education efforts and community commitments (Kreps & Sparks, 2008; Mitrani, 2006).

The format of the program may include creating FBAI community health day that involves faith-based groups and organizing health fairs involving local health care agencies and the community (CDC, 2015). The program design may also incorporate BP testing at designated accessible locations and HTN counseling session (CDC, 2014). The state and local health department need to be available to support these programs on an ongoing basis by providing the necessary resources required by the organizing groups (CDC, 2015).

Summary

In this chapter, I reviewed the literature on HTN among FBAI and immigrants from other countries. Many of the studies involved non-African born immigrant groups in the United States and some included women. The review showed a high prevalence of HTN among FBAI, especially African immigrant women, and described a range of individual, environmental and sociocultural factors, both physical and psychological, that may be contributing to this. Of particular interest were studies showing how limited English proficiency and health illiteracy impact perceptions of treatment, how challenges related to communication of health needs and the location of available services affect awareness of HTN, and how cultural beliefs and opinions can influence utilization of health services and self-management behaviors. Equally important were studies demonstrating the frustrating interplay of financial constraints, racism, and discrimination in the FBAI experience of acculturation.

Chapter 3: Research Method

Introduction

The purpose of this study was to explore the perceptions about causes and treatment of HTN in a sample of adult FBAI women less than 65 years of age. This chapter includes information on the methodology, sampling, and procedures used in data collection. It also includes a summary of the appendices. This chapter also includes procedures for data analysis and a discussion of the trustworthiness of the study approach to ensure future duplication of the research future.

Research Design and Rationale

I used a qualitative design with a phenomenological approach to explore the perceptions of FBAI adult women with hypertension regarding causes and treatment of hypertension. The phenomenological approach enabled an in-depth description to facilitate a comprehensive understanding of participants' lived experience regarding their management of the HTN. Through a phenomenological method of inquiry, FBAI women's perceptions about HTN treatment could yield culturally sensitive concepts that may be useful in self-management education. I chose a phenomenological approach because as stated by Creswell (2018) phenomenological method enhanced an in-depth exploration of the thoughts of participants.

I used the open-ended questions to obtain detailed responses from participants. I identified major meaningful themes that emerged from the interview text transcripts and organize my findings in a narrative form around themes that described the patterns in my data.

Research Questions

RQ1: What is the lived experience of FBAI women regarding HTN diagnosis and treatment?

RQ2: What do FBAI women believe about the causes and complications of HTN?

RQ3: What is the experience of stress and coping among FBAI women with HTN?

RQ4: What is the experience of FBAI in accessing health care for HTN?

RQ5: What do FBAI women believe should be the ingredients of a successful HTN education program?

Role of the Researcher

In my study, I performed a dual role as interviewer and researcher.

As the researcher, I established relationships with organizations that served ethnic minority communities in Maryland and DC. I made presentations about my study to those groups in the DC metropolitan area that expressed interest. Establishing relationships with organizations that served ethnic minority communities facilitated the recruitment of potential participants.

I envisaged challenges that could threaten the accuracy of my data because I conducted the interviews. I am a clinician, and it was difficult to ignore my biases. I bracketed my personal views on the topic through a reflexive process to provide a more accurate account of the phenomenon under study. As an African-born immigrant woman, I had personal values and experiences that could potentially impact the quality of the research. Therefore, I made concerted efforts to set aside my bias and feelings during the interview and analysis.

Methodology

I conducted a descriptive, exploratory qualitative study using a phenomenological approach. I recruited a purposeful convenience sample of 10–15 FBAI women in Washington Metro Area, then conducted in-depth semi-structured interviews with them. Inclusion criteria were: (a) West-African-born immigrant women (b) aged 18–65, (c) have received a diagnosis of HTN, (d) non-pregnant, (e) fluent in English and (f) a length of stay in the United States of at least one year. I recruited the participants through flyers and word of mouth. I offered a small incentive that facilitated recruitment of the desired number of participants for my study in a timely fashion. I recruited the participants from public health fairs, ethnic salons, restaurants, churches, and women’s cultural and organizational events.

Daramola & Scisney-Matlock (2014) Mendez-Luck et al. (2011) and Alvarez, Vasquez, Mayorga, Feaster (2006) stated that they recruited African immigrants in their studies from churches, health fairs, and cultural events. I attended health fairs and community events and used face-to-face contact and word of mouth to create awareness of my research and find potential participants. So, I recruited many of my participants from churches, health fairs and community events organized in African immigrant neighborhoods. I recruited my participants in spring and summer when many West African community groups held their social events and church conventions. I interviewed participants at their homes through face-to-face format or on the phone according to their preferences.

My invitation/recruitment letter (See Appendix A) and flyer (See Appendix E) described the invitation and participation process. I also contacted leaders of African faith-based, and non-profit community-based organizations such as beauty salons, African business centers, women's conference and church groups to distribute my flyers. I was available to answer questions from women who contacted me to know more about my study and some of them expressed their interest in participating in the study through phone calls and emails.

Instrumentation. I used the invitation/recruitment letter (See Appendix A), the demographic questionnaire (See Appendix B), and the screening interview protocol (See Appendix D) to recruit 20 participants.

I used a written interview questionnaire (See Appendix C) to collect data from 15 of the 20 participants that revealed prospective informants' experiences about the causes and treatment of HTN.

I asked additional probing questions as well. White et al. (2012) Yi et al. (2014) Hekler et al. (2008) Lazarus & Folkman (1984a); Groomes & Leahy (2002); Saurman (2016); Khongthanachayopit & Laohasiriwong (2017); Levesque et al. (2013) and Schapira et al. (2012) used either the constructs of the HBM, Stress and Coping and PCAHC in their research design. Han et al. (2007) Aroian, Peters, Rudner & Waser (2012); Schlomann & Schmitke (2007); Kronish et al. (2012) Dela Cruz & Galang (2008) also examined various immigrant and minority populations. Therefore, I integrated ideas from their studies in the formulation of the interview guide. I also utilized information from Sewali and colleagues that focused on African immigrants in the United States to develop the questions. Although there is no specified limit in the literature regarding the number of questions appropriate for a qualitative study, the 40 items in my interview guide yielded in-depth feedback that answered my research questions.

Data collection

I collected data from participants through a one-on-one, face-to-face interview. A face-to-face conversation allowed me to participate and observe non-verbal cues which could be helpful in generating more details. I used semi-structured open-ended questions. The interview session for each respondent was approximately 45 minutes. I conducted a telephone interview where a face-to-face meeting was not possible, and for follow-up interviews for additional data clarification. I continued data collection until I reached saturation. The interview guide had 40 open-ended questions (See Appendix C) that elicited detailed responses related to experiences of various HTN risk, diagnosis, treatment, stress and coping, barriers accessing HTN care and suggestions on improving HTN care.

Data Analysis Plan

I digitally recorded the interviews and independently transcribed all the responses to each question verbatim. I organized my data through a manual hand coding of participants' responses. I analyzed the participants' demographic data, transcribed the taped interview responses, and developed an electronic database of text transcript for each participant to ensure preservation of their responses. Subsequently, I conducted a thematic analysis of the textural description through a manual search for the central meanings and patterns in the data and translated them into a coherent sub-group of preliminary and final themes.

I used tables to present both the demographic data and showed how the sub-themes related to the five research questions.

Trustworthiness. Lincoln and Guba (1985) criteria for credibility, dependability, confirmability, and transferability was used to establish methodological rigor. To ensure trustworthiness of findings, I asked probing questions and spent an extended period of time to re-read, understand and identify patterns. To ensure the integrity of my results, I tested the interview questions by interviewing a professional colleague and a friend from Nigeria, which enabled me to eliminate questions that appeared redundant and obtained a better estimate of the duration of the interview. I did not include those two interview transcripts used in testing the instruments in the actual study data.

I also employed peer debriefing by sending samples of my best four interview transcripts my chair for his expert review to confirm data saturation. I transcribed from the participants' original text. Crosby, DiClemente & Salazar (2013) stated that the use of multiple theoretical framework in the qualitative studies help to increase the rigor and increase the credibility. Therefore, I integrated concepts from three theoretical frameworks to strengthen the quality of my research design.

Ethical considerations

Nwoye (2009); Venters and Gany (2011) stated that immigrants who may not be documented residents were reluctant to volunteer personal information or participate in research. I considered the sensitive nature of interviewing FBAI that may be undocumented or in the country illegally. I did not force participation and excluded the interviewee's personal information such as name, address, and immigration status. Agreement to participate in the study after reviewing the informed consent form served as signing the consent and I allowed participant to clarify any questions in the consent form before conducting the interview. The consent form and interview questionnaire were anonymous so I could not identify the participants by name or date of birth. I only interviewed participants who self-reported a diagnosis of HTN and did not access participants' medical records.

I used bracketing and reflexivity in my design and avoided coercion and integrated the concepts of confidentiality, consent, and communication. My study involved adults who made independent decisions and excluded older adults who required their adult children caregivers to be aware that they were participating in research. The explorative nature of a qualitative study may have made immigrants who were not legal residents to be cautious and suspicious of the purpose of the data. I avoided immigration status questions that could trigger privacy concerns. Participants were not hesitant to answer sensitive questions such as, their length of stay in the United States.

In addition, I used the phrase ‘foreign-born persons’ instead of ‘immigrants during the interview to help dispel unnecessary fears of those who may be avoiding deportation.

I distributed flyers that had my phone number and email in various places where various Africans socialized and went for leisure events.

I obtained permission from various locations such as churches, restaurants, and dry cleaning shops before distributing the flyers. I used participants’ homes as the interview setting and obtained approval to audio-record participants before conducting the interview. I excluded individuals who were not fluent in English from participating in the study. I did not require the signature or name printing in completing the consent form. I tried an app to facilitate initial transcription of the interview to text, but I found it required longer time to use the app than it took to do a manual transcription.

Summary

The purpose of this qualitative study was to describe the lived experiences of FBAI women about the causes and treatment of HTN. In this chapter, I explained the methodology, methods for sampling, data collection and data analysis, exclusion and inclusion criteria and my role as the researcher. In Chapter 4, I presented the data and analysis of my finding.

Chapter 4: Results

Introduction

The primary purpose of this phenomenological qualitative study was to explore the lived experience of HTN among FBAI women living currently in the Washington DC metro. Creswell (2018) stated that purposive convenience sampling is appropriate when it may be difficult to randomly select participants from a large population. According to Creswell (2018) randomization may require longer time, more resources and more staff to recruit participants. Therefore, I interviewed a purposive convenience sample of 15 FBAI women (18–65 years) who self-reported a diagnosis of HTN. I used a semi-structured interview guide to explore the women's lived experience about causes and treatment of HTN. In this Chapter, I described the demographic characteristics of the participants, data collection, analysis and the findings. I presented the major themes that emerged from the data as well as the strategies I employed to ensure the trustworthiness of the data.

There is no adequate description of HTN health among FBAI women living in the United States (Ndikum-Moffor et al., 2015). A recent study that examined FBAI residing in Washington DC area showed that many of the participants were born in Ghana, Nigeria and Liberia (Commodore et al. 2015; Sewali et al. 2015). Recent studies that examined perceptions and beliefs about HTN included participants who were not American women born in West Africa (Crump et al., 2016; Sumner et al., 2016).

There are very few recent descriptions of the general beliefs and perception about HTN among United States immigrants born in Africa (Beune et al., 2006; Osamo & Owumi, 2010; Frosch et al. 2008; Schlomann & Schmitke, 2007).

Research Questions

RQ1: What is the lived experience of FBAI women regarding HTN diagnosis and treatment?

RQ2: What do FBAI women believe about the causes and complications of HTN?

RQ3: What is the experience of stress and coping among FBAI women with HTN?

RQ 4: What is the experience of FBAI in accessing health care for HTN?

RQ5: What do FBAI women believe should be the ingredients of a successful HTN education program?

In this study, I focused on examining the beliefs, understanding, and perceptions about the causes and treatment of HTN among United States women born in West Africa. My study design included a purposive convenience sampling approach. I placed the recruitment flyers on the information board of a local large African church. I also attended a cultural event where I distributed my flyers to attendees from Africa. I distributed my screening questionnaires to the women.

I discussed my dissertation at every social event I attended and offered my flyers to any FBAI woman that expresses interest in my research. Those women who were enthusiastic at first contact were provided with the screening questions to ascertain that they met the inclusion criteria and were eligible to participate in my study.

Subsequently, I provided 20 participants from Ghana, Nigeria, Liberia, Sierra Leone, and Cameroun with the consent form either in person or by email. Later, I clarified any questions some of them had through either phone calls, text messages, or emails. However, I excluded three of the 20 women that could not find a convenient time to learn more about my research or review the information provided on follow-up from my study. I used a 40-item interview guide with open-ended semi-structured questions to interview my final sample of 15 participants.

I independently used a hand coding approach to tease out meaningful topical categories out of the data. In order to identify the categories, I manually compiled the sentences that summarized the responses of my participants from the recurring keywords, phrases, and statements in the transcripts. I reviewed the data and identified 14 preliminary patterns or sub-themes. The ten final category of themes which emerged from the analysis are as stated below:

1. Feelings about HTN
2. Pharmacological treatment
3. Non-pharmacological prevention and management

4. Use of alternative and natural remedies
5. Beliefs about causes of HTN
6. Knowledge about complications
7. Hypertension stress and coping
8. Access to Hypertension health care services
9. Opinion and Preference for healthcare providers
10. Ethnic-cultural perspectives and preferences

Setting

I conducted all the interviews in the participants' location of preference. A large number of the FBAI women in this study identified as women of faith but did not mention any personal or organizational conditions that influenced their opinion about the causes and treatment of HTN. Those participants that worked in the health field reported that they understood the need to practice therapy recommended by their health providers. Nonetheless, the health experience of participants that worked in various health fields did not influence my findings. In spite of their understanding of the health implications of not adhering to HTN control measures, participants that were health professionals reported that they did not consider it a priority to take their BP medications everyday as prescribed by their clinicians.

Demographic Data

I conducted oral interviews with participants and reached data saturation after I interviewed a total of 15 women. As shown in Table 2, 12 of the women in the study were born in Nigeria and Cameroun and others from Sierra Leone, Liberia, and Ghana. The participants' age-range was 31–65 years, and their length of stay in the United States ranged from 4–30 years. Eight of the women were above 30 years of age when they came to the United States. This was a highly educated sample: 14 of the 15 women had either college or post-college degree, and 12 of those with at least a college degree worked in a health-related profession. Thirteen of the women had either a private or federal health insurance. All the participants had received a diagnosis of HTN, and many reported having a parent, grandparent or sibling with a history of HTN. Table 2 is a summary of some selected demographic characteristics of the participants.

Table 2

A Sample Table Showing Participants' Selected Demographics (n=15)

Variables	No. of participants	% of participants
Age range		
30-40	3	20
41-50	2	13
51-65	10	67
Mean age on arrival to USA		
17	1	7
22	4	27
30.5	6	40
40.5	2	13
46	2	13
West Africa country of birth		
Nigeria	7	47
Liberia	1	7
Cameroon	5	33
Sierra Leone	1	7
Ghana	1	7
State of Residence:		
Maryland	14	93
Washington DC	1	7
Length of residence in United States		
Below 30 years	13	87
30 and above	2	13
Level of Education:		
High school	1	7
College graduate	8	53
Advanced degree	6	40

Data Collection

I conducted all the interviews in the evenings between April and May 2018. On the actual interview day, I reviewed the consent form and provided the participants time to think through before they permitted me to audio-record the interview. I interviewed twelve of the participants in person at their homes and preferred time that ensured a quiet environment and privacy. Each interview lasted for 40–50 minutes. I used follow-up probing questions to elicit an in-depth description of participants' views about their perceptions on causes, treatment, about stress including experiences related to access to HTN care.

I completed a verbatim textual transcription of the audio-recorded interview and compiled the memo/notes I took during the interview (interview/field notes). I used the transcribed text and the notes I took during the conversation for the hand coding I did at the initial stage of independent thematic analysis. I collected data from all participants with the audio-recorder. I wrote notes of other relevant non-verbal information I observed during the entire interview. I offered all the participants—including those who could not complete the interview after they expressed their interest in the study—a BP Wallet card and \$5 Raza International calling card. I stored the Word documents of the transcripts in a secret password secured Google drive. I did not share these passwords with anyone else. I intend to delete these files completely after 5 years in adherence to Walden University dissertation research policy.

Data Analysis

At the initial organization of my data, I listened to the audio recording repeatedly. I transcribed all the interviews verbatim on Microsoft word. I used a quick voice transcription software to transcribe one of the recorded interviews but completed the rest of the transcription manually. Subsequently, I read the transcripts several times before I started a manual open-hand coding of the transcripts.

I performed a manual search from each set of interview responses and identified the keywords and sentences that emerged from the interview questions. Afterward, I noted patterns of meaningful phrases and quotes in the transcripts. Subsequently, I developed a preliminary themes based on the five research questions derived from the three conceptual frameworks I used in designing the study. I also used a colleague's expertise in qualitative analysis to double check the preliminary themes I developed during manual coding and ensured I did not miss keywords or phrases that re-occurred.

I combined the preliminary topics with other unexpected findings that further emerged from the study and formed the final themes. Furthermore, I examined the relationship and interactions between the final themes that emerged from the data. Table 3 shows the preliminary themes that provided answers to the research questions.

Table 3

Preliminary Themes

Research Questions	Preliminary Themes
What is the lived experience of HTN diagnosis and treatment among FBAI?	<p>Participants were scared, shocked and worried at their HTN diagnosis</p> <p>Some feel when blood pressure is low or high, others use a machine</p> <p>Many take pharmaceutical drugs for their HTN and know how to use them</p> <p>Many are aware of lifestyle modifications to control HTN; few practice them</p> <p>Many use herbal supplements but lack information about their side effects</p>
What do FBAI women believe about the causes and complications of HTN?	<p>Most had knowledge of factors they believed contributed to their HTN</p> <p>Many participants were aware of some of the complications of HTN</p>
What is the experience of stress and coping among FBAI?	<p>Participants recognized that stress and HTN are related</p> <p>Sources of stress were issues related to their health, jobs, family, friends</p> <p>Coping measures included faith-based activities and personal leisure choices</p>
What is the experience of FBAI in accessing health care for HTN?	<p>Many had medical insurance; few had gone to the ER in the past year</p> <p>Many reported negative experiences with their health care professional</p>
What do FBAI women believe should be the ingredients of a successful HTN education program?	<p>Culturally sensitive providers and education are highly valued.</p> <p>Incentives are needed to facilitate effective self-management of HTN</p>

Evidence of Trustworthiness

According to Lincoln and Guba (1985) the four terms used to demonstrate the trustworthiness of research data findings are credibility, dependability, confirmability, and transferability. Evidence of trustworthiness is how a qualitative researcher demonstrates the integrity of research (Lincoln and Guba, 1985). In a qualitative study the evidenced of credibility is assured when findings are accurate, dependable confirmable and applicable to another context.

Credibility. Credibility is how to ensure that results are accurate. To ensure the credibility of data results, I developed a 40-item interview guide with semi-structured questions that utilized three conceptual frameworks as a template for my interview which yielded robust, in-depth data and strengthened the quality of study findings (Crosby, DiClemente & Salazar, 2013). I conducted the majority of my interview in person and asked follow-up probing questions. I also was in contact with all the participants and was able to contact them to clarify any information after the actual interview. I spent an extended period reviewing the transcripts to understand the data and identify patterns (Lincoln & Guba, 1985).

Transferability. My data analysis showed some unexpected results from my participant's responses that further reinforces the need for precision health care. In other words, the contexts, circumstances, and situations of FBAI women may vary due to differences in their demographic characteristics such as educational status and career.

There are a few questions that appeared repetitive though meant to elicit more in-depth responses that yielded more comprehensive answers used to generate major quotations that answered the research questions. The FBAI women's description of what they considered ideal HTN services showed connotations that may be culturally useful in immigrant minority groups.

Dependability. After I completed the transcription of all the interviews. My Chair also reviewed and audited the first and last set of the textual transcripts. He confirmed that I reached data saturation with my fifteenth interview. Also, after the initial hand coding of the transcripts, I developed my preliminary themes and sent the list along with the transcripts to a colleague who is an expert qualitative researcher in behavioral study not related to my topic or population and she performed an independent analysis.

Confirmability. Confirmability helps establish that the research study's findings are accurate participants' responses. To ensure that the results are not based on personal motivation or potential bias. I provided a comprehensive account of the research data collection process. Including recruitment process, the description of my research setting, the participants' demographics and characteristics, including data analysis and interpretation. I did not have any personal or professional affiliation to any of the participants in my study. I made effort to ensure I included women from multiple West African countries.

I took notes during the interview and maintained a reflexive journal of all the direct quotes from participants. I bracketed any interference of my thoughts and potential bias as I interpreted participants' answers to open-ended questions and developed preliminary themes.

Results

RQ 1: What is the lived experience of HTN diagnosis and treatment among FBAI?

Feelings about HTN.

Subtheme 1. Participants were scared, shocked and worried at the HTN diagnosis. Participants described their feelings about their diagnosis of HTN. They felt scared, annoyed, shocked, surprised, worried, concerned, sad, uncomfortable, and depressed about living with the diagnosis of HTN. P8 described HTN as a "*silent killer*" and she said:

I feel like it's a pest in my life, because no matter what I can't stop thinking about it I cannot deny the fact that it's there I might not be doing anything about it or doing as much as am supposed to so it's so annoying (P8).

Three of the participants below forty years of age stated that they were upset and were in denial for a long time after their initial diagnosis because they thought they were too young to have HTN. "Sometimes it is painful, not good experience to have it at this young age."

One of the women described obsessed thoughts of what could happen if her BP is too high as she went about her daily chores and often anticipating she could die anytime from HTN. " I am scared, concerned and worried and if I have headache I check my blood pressure and worried that anything bad can happen to me any time"(P1).

However, [P6] a 65 year old woman whose husband and parent died from complications of HTN said she was neither sad nor surprised about having HTN. "I am familiar with HTN and not too worried because my late husband suffered from it so it wasn't a diagnosis that was new to me"

Subtheme 2. Some feel when blood pressure is low or high, others use a machine. Regarding their description of low, normal and high BP range, four of the women said they knew their BP was low if they felt lightheaded. Only eight of the women actually checked their BP to confirm if it was in low or high range. Two of the participants described normal BP as equal or less than 130/70-80mmhg. However, explaining how she knew her BP was high [P5] a nursing assistant with a reported diagnosis of stroke replied: "I know its high when it's 160/96, feel weak and tired at times."

Though the participants felt their BP was high when they had ill feelings of a headache, or dizziness, participants also assumed that their BP was high if they felt stressful, not calm or relaxed. [P8] a medical doctor said she was not too keen in monitoring her BP recently. Regarding how participants knew their BP was high, [P8] responded:

"Maybe when it's like 180, and up I might feel a little dizzy or a little headache, even though I do not attribute those symptoms to high BP I will think something else, so I don't go by that."

Eight women that did not measure their BP with a machine believed that if they rested and slept well in the previous night and felt well when they wake up it means their BP is likely normal. However, seven women stated that they checked their BP to confirm if it was normal. [P1], a Nigerian born woman, and a registered nurse said:

There is nothing that makes me know if it's normal. Checking it is the only way I know it's normal because at times I thought it is high because I had pain or a headache and I check it, and it is normal (P1).

Fourteen of the 15 participants described the symptomatic feeling of a headache as an indication that their BP is high: "usually the machine gives me a number indicating high."

Pharmacological treatment.

Subtheme 3. Many take pharmaceutical drugs for their HTN and know how to use them. Many of the women took medicine for their HTN treatment and knew their use. Many of the participants could recall the name of their medications. Though some missed taking them a few times a week, and some were not concerned about missing their medications.

Many of the participants used medications prescribed by their health care providers for HTN treatment. A 65 year old woman gave a detailed description that showed she is knowledgeable about her medications.

There was a time I stopped my Lisinopril, and water pill and my right foot started swelling which tells me am retaining water so I called him and said can I take a full tablet so that my swelling will go down, then I also went back to him told him am tired of carrying two bottles in my purse I need to carry only one, and my son is a pharmacist and he is the one that told me there is a combined pill I can take to get both medicines in one so my doctor switched me and that's what I have been on for the past two years (P6).

Participants in response to their understanding of taking their daily BP medicine described it in relations to the timing of their medication. "Taking it every day and at the same time." [P1] understood adherence to medication as being consistent and taking it every day as prescribed by the doctor. However, a few of the women in the study including [P12] thinks regular intake of medication does not necessarily imply taking every day as prescribed as she said "I hold off on my medication if I feel lightheaded and my BP is low." In her effort to ensure adherence to medication [P13] described a special timer attached to medicine bottle caps she bought from rite aid pharmacy.

Once I open and close the bottle, the timer on the cap starts to count the seconds to minutes and hours and every day that's how I track when I am supposed to take the next pill and the last time I took it (P13).

Many participants explained the rationale of taking BP regularly as ensuring a certain level of the medicine is the blood to prevent low and high BP readings.

[P2] in her explanation of why she took her medication regularly said "It has to be taken regularly because it has to be in the system at a certain level for it to work well"

Participants in this study used either or a combination of the following medications for their HTN treatment-Diovan, hydrochlorothiazide (hctz), Benicar, Norvasc lisinopril or metoprolol. None of the women took their BP lowering medications consistently as prescribed by their HCP.

James et al. (2014) reported the increasing lack of adherence to HTN medications. Some of the reasons participants in this study missed or stopped their medicines were the side effects of the medicine, frequency of medications, and forgetfulness especially, on a busy day. Some of the participants expressed they had dizziness, lightheadedness, fatigue, and sleepiness after taking some of the BP medicines. Two women shared their experiences with prescribed medications. I tried several medications but because of side effects from different medication and after a while some meds like lisinopril, was no longer working so they added hctz, Norvasc, and another one I can't remember."

Two other women said: "I take metoprolol, it makes me sleepy and tired" "I am tired and more sluggish with the metoprolol" I do get some headaches which I believe is from the Lisinopril.

The participants felt self-discipline is necessary as taking medicine every day at the right time is challenging, difficult and annoying. One of the women described her experience with taking medicine every day as "a pain in the neck."

A few (n=3) felt with self-discipline taking their medicine regularly was not very challenging though they forgot to take their medicine once in a while and in many of the occasion where they forgot they took their medicine as soon as they remembered.

Reasons for not taking medicine every day or regularly as prescribed were because of the work schedule. "It was not an easy experience as I forget at times." All the women believed HTN medications were necessary but wished they did not have to take them for the rest of their lives.

A few of the participants felt good and accepted the fact that they will be on BP medications for the rest of their lives. [P6] in response said "I accepted that a long time ago, I started taking the pills at 43 today am 65, I have no problem of taking a pill if it will keep me alive."

However, many of the participants hated taking medication for the rest of their lives. [P11] wished there is another way to control HTN other than taking medications on a daily basis and expressed her terrible feelings about treating HTN the rest of her life as “trapped and in bondage” and [P9] described her feelings as follows:

I don't even think I'll even take it for the rest of my life because my doctor is really following up and monitoring it but it's hard for her when it goes down for a while maybe for six months she doesn't want to take me out of it but taking medication for the rest of your life is not what I really think he's good for me (P9).

Non-Pharmacological prevention and management.

Subtheme 4. Many are aware of lifestyle modifications to control HTN; few practice them. Participants mentioned some non-pharmacological treatment measures namely: weight loss, regular exercise, stress reduction, drinking a lot of water, eating fruits and green raw food especially leafy vegetables and getting rid of meat from the diet. A nurse practitioner [P12] also described how she reduced the amount of coffee she consumed on daily basis. In her response said: “I cut down on coffee because I used to drink a lot of coffee now I drink a cup at home, and that's it for the rest of the day now I drink water.”

Only one participant mentioned getting adequate sleep as a HTN management measure. A participant who was on a diuretic (water pill) said she ate lots of banana to prevent low potassium side effects from her medication.

While [P1] stopped frying food and either baked or grilled. [P10] "Cut down on eating very late at night." [P14] demonstrated her HTN self-management skills in making healthy food choices in her response:

I stay off food that have high sodium, so I use low sodium salad dressing which is so high and I switched to the one I buy from Sam's club and I read food label a lot and when I go to grocery store am there for 2-3 hours reading food labels, to select food like cereals with lower sodium content and I also do not eat Chinese food (P14).

Four of the 15 participants stated they exercised about 3-5x/week. [P15] stated that she "prefers an exercise in the form of recreation because so that you are exercising and having a break from life." Some of the exercises participants mentioned include brisk walking and climbing hills. [P9] used her phone to count steps while walking and [P1] described intentional exercise she takes as "walks couple of times a week, just move. It's getting up and about." While [P14] said "I have a treadmill in the basement so I work out 30-45 minutes every day." In her description of measures she took to reduce work-related stress [P8] stated:

I resolved to lifestyle modification since I could not achieve control with various kinds of medication-I changed my job, and as a physician I do not really practice I do weight loss counseling which has tremendously reduced my work-related stress (P8).

In their description of self BP measurement 13 of the participants said they had their BP machine and use them to check their BP. The two participants that did not own a BP machine set went to a drug store regularly to check their BP. Many of those that had a BP machine said they checked their BP mostly in the morning and once a day. Except on occasions where they had headache or felt their BP may be either high or low that they checked it more than once a day. However, [P7] and [P8] (siblings) did not use their BP machine regularly to check their BP though they had one at home.

All the 13 participants mentioned the steps they used in the measurement of BP included-resting for a few minutes before measuring, wrapping the cuff on their upper arm and pressing the start button while the arm is relaxed to get their readings. [P9], [P10], [P11] and [P12] stated that they measured their BP as follows: "I bring my cuff, sit in a comfortable position and try to support the arm, press the start button and get the reading from there." "I use the machine, the automatic one, so when I plug it on I put it on and it tells me what it is." "I try to do it early in the morning when I wake up, before

going to work." "I take it when I get up in the morning I sit down in bed then I check it, if I have to check it at night, I am done and relaxed then I check it.

In response to their level of confidence in managing their HTN effectively, all the participants stated as long as they take their medications they were confident and believed they could safely handle their BP. Many of those in the health field said their confidence was because they are nurses and quite aware of what to do. [P8] a physician said:

I am confident, it's funny because I can manage my BP without having to see a doctor because that's what I do as a profession, but I will still see a doctor and give him guidance on what I want (P8).

[P4] felt confident because she owned a machine that can tell her if her BP is normal or not. [P6] derived her confidence from experience with caring of family members that had HTN as she said:

I am pretty confident I took care of my husband and mother who had hypertension. So most of the illness that family member as I have a little bit of knowledge even though am not a nurse, also my son is a pharmacist (P6).

[P7] who does not check her BP said about her level of confidence in self-management answered: "I am not, I know am not doing well. "While [P10] derived her confidence from God and said "I take my medicine and I believe God will help me."

Use of alternative and natural remedies.

Subtheme 5. Many use herbal supplements but lack information about their side effects. All the participants said they would prefer natural herbal remedies and alternative HTN treatment measures to using tablets and pills. [P5] a former nursing assistant said "I think cod liver oil helps regulate BP." Some of the participants (n=12) used supplemental herbal remedies in addition to their prescribed medications.

Very few of the participants (n=2) either reported not taking medications or took herbal remedies in place of their medications. Many of the women knew the alternative measures might not provide a permanent cure and expressed concern with not knowing the long-term damage and how to quantify the dose necessary to control their BP. [P6] response to the use of alternative medicine said:

You can do alternative ways, but I don't advise anyone to stay off their meds, if I start doing alternative ways, and I started noticing that BP is getting low then I will talk to my doctor that my BP is very low, and I want to take my BP pill every

other day, and we see how that works about 6-12 weeks because most medication after 2 weeks you can tell if its effective or not (P6).

Another woman [P15] said she would only consider natural supplements if she can genuinely ascertain that success reports advertise about such alternative measure was accurate and remained valid after long-term use.

In response to their thoughts about the use of herbal remedies, it appeared all the participants in the health career fields said what they knew was right but admitted that they did not practice what they taught their patients. Many of the participants expressed the need to combine the use of herbal remedies with seeking medical attention. Another expressed personal concern with using herbal and said: "I find it hard to believe or use any of them especially as I do not know about the quality control and side effects."

[P14] said "traditional herbal medicine to treat BP is good but one thing with traditional herbal medicine is that there is no measurement like we have the pills."

[P15] also said "There is no research that has proved the effectiveness of that since you can't quantify the side effects their contradiction it may put you in a higher risk than helping you." In response to their opinion about the use of alternative or herbal treatment measures, the participants mentioned that they have heard of or used the following herbal or natural remedies often in the morning: Hibiscus tea, red beets, beet juice, garlic, cod liver oil, oolong Chinese tea, ginger, Apple cider vinegar, coconut oil, turmeric juice, ginger-lemon juice, and Moringa.

Some women also mentioned complementary or alternative treatment measures that lowered their BP such as tub water soak and swimming, drinking hot water/warm water first thing in the morning. One of the women, [P3], a school nurse and a mother of three said:

"I like water, I like to go in the water, soak myself in the tub and that relaxes my BP." [P10] a woman of faith said "sometimes I Google a lot of things to see what works" [P14] with a significant family history of HTN that affected her son at early teenage years said her son tried hibiscus tea. She said her son would sip it all day and that controlled the BP though he had frequent urination as a side effect of the hibiscus tea. [P14] said her son had not taken his prescribed HTN medicine for many years after starting the hibiscus tea treatment. So, she started snacking on 4-6 pieces of red beets every morning and drinking a cup of hibiscus tea in the morning and at bedtime. She said she has not been taking three of her four BP medicine since she started using these medicinal plant supplements and would wish that doctors could recommend these alternative remedies to their patients.

She said "Hibiscus took away my son's anxiety and HTN. If you Google hibiscus tea it will tell you that Duke University has conducted a study on it and some universities in Nigeria. "One of the women passionately shared challenges in adopting the dietary education that does not incorporate her cultural food preferences and lifestyle.

As a foreign-born African, exercise is not part of the deal, there is no room for it in my calendar. Even the calorie king regarding losing weight there is no equivalent regarding what a bowl of fufu, fried plantain, the kind of beans we eat am not sure is the same calorie value as black eye pea.

There is no equivalent to what egusi soup has so it's a challenge for me now as I just estimate and put something inside it which may be wrong. There is no equivalent to cow foot, as a piece of steak has and those are an integral part of what people eat in my culture, how do I translate palm oil in my do not touch list as a hypertensive (P15).

**RQ 2: What do FBAI women believe about the causes and complications of HTN?
Beliefs about causes of hypertension**

Subtheme 6. Most had knowledge of factors they believed contributed to their hypertension. All the participants mentioned risk factors related to either dietary choices, high level of stress, overweight or obesity, sedentary lifestyle, or positive family history of HTN. Most of the women believed that they inherited HTN genes from one or two of their family members but unhealthy food choices and dietary habits also made their HTN worse. Especially, their consumption of smoked, frozen or canned ethnic foods such as

such as smoked turkey and fish, *fufu*, *garri*, plantain, cassava, corn "too many fried foods, and lots of seasoning that are salt-based."

Other factors participants believed contributed to their HTN include pre-eclampsia in previous pregnancy and inadequate sleep.

[P3] a registered nurse with a diagnosis of Type 2 diabetes believed that some specific dietary habits such as not reading food labels, adding salt to already cooked food put her at high risk for HTN. "Some of the spices we use also have hidden salt and sometimes the food I eat has a whole lot of salt, for example, smoked turkey and other kinds of smoked food." [P13] a full-time college student also mentioned specific ice cream which she could not recall the brand name. [P1] who developed HTN shortly after graduating from an intensive baccalaureate nursing program responded that psychological stress from meeting multiple school deadlines in addition to a full-time job and taking care of family contributed to her disease. In addition, she said lack of attention to one's health because of busy lifestyle. [P1] also stated that habitual snacking on high salty food such as pretzel might have been a strong reason she developed HTN:

My mom would swear that it is from eating pretzels that contributed to my having HTN and I always had pretzel in my bag, that's what I will have on to snack all day until I got home to eat (P1).

The women in this small sample believed that overweight, obesity, sedentary lifestyle, either or a combination of menopausal state, psychological trauma, marital problems, caring for children, working a lot contributed to their HTN.

“We overwork without knowing when to stop without listening to and my body tells me am tired but am still pushing.” One of the women said "its overweight and I believe it's also related to my diabetes. I feel diabetes may have contributed.”

Other behavioral factors that they believed caused their HTN include excessive worry, anxiety, panicking, and lack of adequate rest /sleep/ relaxation. It is noteworthy that nine of the 15 participants believed psychological stressors described as grieving from the loss of family members, marital issues, anxiety and worries about infertility, school and job demands, and financial problems caused HTN. [P6] responded:

For me it was trauma, I developed HTN at the age of 43, my son whom I didn't see the corpse because I was here in the United States then six weeks after the father also died, so the stress of the trauma expedited my developing HTN (P6).

Another woman said:

For me am a happy woman, but I think I started getting worried especially as I was having delay getting pregnant, and it's not forth coming and I would sit down and cry and that was when I noticed it (P5).

Knowledge about complications.

Subtheme 7. Many participants were aware of some of the complications of HTN. A large number of the women in this small sample thought they could have stroke and die anytime if their BP is too high and HTN not controlled well. Eleven of them mentioned they could collapse, develop stroke and die as a result of uncontrolled or poorly controlled HTN.

"I know I could stroke out and I think that scares me a lot." I might collapse, actually if care is not taken I will die". Many of the participants also believed they could have complications such as heart attack and aneurysm as one said: "It can cause TIA/stroke, am sure there is a relationship between BP and aneurysm. "Only one participant (a medical practitioner) included kidney and heart failure as additional complications of HTN. P1 stated, "I believe if my blood pressure is too high it can cause me to pass out."

Other complications reported by the participants include heart attack and transient ischemic attack. P5 stated "I might collapse if care is not taken I will die "and P14 included a complication she described as "go to sleep and don't wake up."

RQ 3: What is the experience of stress and coping among FBAI?

Hypertension stress and coping

Subtheme 8. Participants recognized that stress and HTN are related.

In response to what they thought about stress and HTN, participants believed that their HTN was as a result of stress and mentioned some irritable stressful feelings similar to

what they also felt when their BP is elevated. [P1] said “for me my BP came from being under so much stress”

According to [P6] "stress causes stroke if you are hypertensive and when all we are thinking of is how to make the next buck and we work so hard thinking we are going to make life for people in Africa better."

Others felt headache, confused, irritable, pressure, tiredness, worried, unable to sleep, can't think right or concentrate, body ache, headache, strained eye, sucking lips, cranky, pessimistic, overwhelmed, withdrawn, frowning when their BP is high and they are under lots of stress. [P2] said "when I am under stress I start to have headaches, I am confused, I can feel that my BP is starting to go up." According to [P3] in her idea about stress and HTN

I feel like stress has a lot to do with HTN, I mean as I said we all need little amount of stress to move on in life get up and do what you have to do but when it's too much it will affect your BP (P3).

Another woman alluded to the fact that stress triggered HTN and has increased her chance of developing complications of HTN such as stroke. “I think stress is interconnected with HTN because when I have a high-stress level or lack of sleep and overwork, I develop a headache and note elevation in my BP.” [P15] in her description of

the stress-HTN relationship said: "I think stress feeds HTN that's what makes it worse, so it's a vicious cycle."

Subtheme 9. Sources of stress were issues related to their health, jobs, family, and friends. The participants described stress as harmful and anxious feeling from lack of sleep or rest, overworking, worried about how to make extra money and meet deadlines. Women stated their sources of stress were primarily their jobs, social media, business, caring for their immediate family and multiple health problems.

Particularly, participants reported feelings of distress at time of initial diagnosis that they continued to experience after many years of living with HTN. "I am tired of checking my BP and taking medications every day." Additional sources of stress reported in this study include financial support of extended families in Africa, and meeting multiple social demands such as attending church, burials, birthdays, weddings, and other family, friends or community events. One of the women described stress as "anything you are going through that disables you or keep you away from a state of rest and peace, a situation that you find yourself being overworked." [P6] expressed her views about stress as "when all we are thinking of is how to make the next buck and we work so hard thinking we are going to make a life for people in Africa better" and [P8] said "I think stress is worse than cancer."

Other examples the women used to describe stress are: "When you focus on a problem, and you don't seem to know how to get solution, you become worried about something that you cannot solve."

All the women stated their experience with multiple stressors that ranged from daily tasks dealing with children, spouses, school and social demands that required deadlines. [P1] described her ideas about stress as follows:

I think as women we are faced with multiple tasks all the time. We have a home front, we are working mothers, and so you have your job that you go outside and then when you come home you have another job waiting for you, then you have your socials, so all these different areas do draw you is like you are pulled in different directions and a lot of demands are made of you and sometimes that can be stressful. So there is something to do at work, home, and social settings and in trying to get all these done or figure out those I need to cancel and not offend people can be stressful (P1).

[P12] also described her stressors as:

Not enough time to complete a task that I have because I have kids and the little ones are 10 and 11, and they have evening activities so am rushing running to work and the type of work I do I spend too much time at work, then home with the kids, then homework and their after-school activities to dinner and make sure they are ready to go for the next day so most of the time I do not go to bed till 11 to 1130, when you have to juggle a lot of things with minimal help. If am at in Africa people will be helping me with some of these daily chores (P12)

Subtheme 10. Participants expressed stress in various ways; coping measures included faith-based activities and personal leisure choices.

Inquiries about how various women expressed stress, respondents said they frowned their face, tensed facial expression, withdraw, or become quiet, angry, argumentative, sleepy, irritated, agitated, yawning, shut down, frown, paces up and down, tired. [P4] a young mother of four said: "I feel it, but I still ignore it because I want to achieve my goal and I don't want to appear am so weak or left things undone." [P15] explained further her expression of stress "When am stressed am either very irritable or am just unusually

quiet. I will just be looking at you because I can't process what you are talking about or what you are trying to do."

Exploration of various measures they used in reducing stress some women responded that they took extra days off from work, sang, listened to music, took vacation or retreat, watched funny TV shows or movie, deep breathing, reading a nice book, eat favorite food, prayer, having a quiet time and meditation on the "word of God."

Twelve of the respondents mentioned prayer, worship, having daily devotion and quiet time, reading the bible as their stress coping measures, According to [P3] report of her stress reduction measures "I will turn my phone off put it on vibrate, I block certain people off my social media list and tell my kids were going to sleep-I mean I drop everything and go to sleep. "Another woman calmed her stress by "drinking lots of water"

One of the women coped with stress at her workplace by taking momentarily time out in her office when she listens to soothing music through her headphone which calmed her down. [P8] attributed her ability to relax in spite of multiple stressors to her faith in God and the bible.

I listen to gospel song, and then I truly use my spare time to fellowship and study my bible, I read a lot now my bible than I used to and I found out from the bible I

understood ways of dealing with things and how we put too much emphasis on things that do not matter, so that really helps me and I have more peace (P8).

[P15] said her biblical way of reducing stress enabled her to have a daily quiet time.

I use my quiet time to mentally list the stressors and see what needs to come up as high priority and not over expecting, lowering my expectation threshold, letting go of some things and feel that it's still ok, even if it does not look the way I would have loved it to look. She also described her biblical way of reducing stress through singing:

I like worship as am a person of faith, I go to YouTube to search for some worship songs, and I will just cry out to Him and lay it out and most times when I do that I feel better.

RQ 4: What is the experience of FBAI in accessing health care for HTN?

Access to HTN Health Care Services

Subtheme 11. Many had medical insurance; few had gone to the ER in the past year. More than 70% of the participants had federal or private health insurance.

Thirteen of the participants had primary care providers that managed their HTN and saw their PCP regularly every 3-6 months. One of the participants does not see a general practitioner; her HTN is managed by a cardiologist whom she has seen only once in the past one year because of conflicts in the schedule that led to cancellations of appointments.

All the women thought it is necessary to see a HCP routinely for BP check, refill of medication and to see a cardiologist at least once a year.

However, one of the participants without medical insurance thinks office visits should be affordable and HCP should "cut down the copayment, both for medicine and for a hospital visit especially for those ready to paying out of pocket."

Though some expressed their frustrations with prolonged waiting in their HCP clinics before they are seen during an office visit for BP follow-up. [P13] a full-time student paid out of pocket and only saw a cardiologist every 3-6 months. Two of the participants had gone to the ER in the past one year due to symptoms of heart attack.

Many of the participants selected their primary care providers from the list given to them by either their insurance, family member, friend or emergency room HCP. A few of the women searched for the nearest cardiologist or doctors from Google. Many of the women lived 10-30 minutes walking or driving the distance to the nearest hospital or emergency room. Many of them decided to change to their current primary care providers because of the convenient location of their clinics. [P6] described her experience utilizing HTN services as:

I do regular physical with my doctor every year then I go at times for cold and I went to ER when I had tightening in my chest and I have never been hospitalized except when I was having babies(P6).

A participant with Kaiser Insurance expressed satisfaction with her access to an eye and heart specialist in the same practice location with her general practitioner and thinks it is

an advantage. Another woman that survived a stroke did not have problem accessing her caregivers and said "I use Metro access to go to see my Dr and my caregiver comes to the house."

Sannon and colleagues reported that immigrants do not seek health care regularly due to lack of health cost coverage. However, this study showed that participants that had health insurance coverage either did not seek HTN care because of side effects of medication, scheduling problem or dissatisfaction with care and they resorted to use of herbal supplements to manage their HTN. [P8] who did not think the doctors knew how to manage her HTN described her recent visit to the ER as follows:

I have been to ER though my symptoms were not related to HTN as alarming as my BP value was when I got to the ER they had to give me IV meds to lower it to some degree and they referred me to cardiology because of irregularity in the heart rhythm (P8).

I noted that the participants who either reported not taking medication or took herbal remedies in place of their medications (n=2) had health insurance coverage. According to Wafula & Snipes (2014) people who may not afford the cost of health services and have no medical insurance coverage use herbal supplements as remedies to ill health. As noted in this study, the use of herbal supplements for treatment of HTN is a matter of preference and belief.

Opinion and preference for health care providers.

Subtheme 12. Many reported negative experiences with their health care professional. Participant's opinion about their HTN health providers varied.

Many of the women were dissatisfied with their HCP that would not listen to their concerns and [P1] felt her doctor became too busy.

I have noticed that lately maybe in the last 2 years he has become very busy and had less time to listen to my concerns, and his goal is like to push medication on me and actually I have been thinking to actually change him because I feel providers don't have enough time to sit to listen to what the patient is experiencing. They want to do the quick fix like give another prescription.

A few of the participants like [P14] expressed dissatisfaction as she stated:

I don't like to go to the doctor and I think my BP goes high when I go to see them. It increases it. My thought is that they do give the medication that you take, but there is no any push or increase to use other means and most of them have a lot of side effects. Like for me I have had to try the 7th or 8th medication because of the

different side effects. So the whole goal when you see the doctors are to put you on medications that don't work (P14).

Another woman said she only went to the doctor because she may not continue to have her refills and renewals of her prescription after certain period of time.

In her response to her experience with health caregivers [P14] said she did not disclose the herbal supplement she was using to her HCP.

A participants complained that HCP would not listen or pay attention to her opinion concerning treatment plan. She described her experience with HCP as follows: "Their goal is to keep you on the medications that are not working or find the next and the next and the next drug." Efforts to ensure adherence include taking the medicine in their work bags, scheduling their daily medicine with their lunch, taking their medicine in the morning immediately after brushing their teeth." I just take it every morning even before I brush my teeth otherwise sometimes I forget."

A woman who described her effort to remember taking her medication regularly said "I put some on my desk, bedside, purse at work and so it's around me in a way am reminded somehow to take it if not I will not take it." [P1] expressed satisfactory experience with her doctor who has been consistent in calling her back, and she has been able to reach him easily whenever she needs a refill or an appointment. In the description of her experiences one of the women felt she noticed at a point in her diagnosis that she

had to advocate for herself when interacting with health care providers "I like seeing my doctor regularly and believe one should speak up."

RQ 5: What do FBAI women believe should be the ingredients of a successful HTN education program?

Ethnic-cultural perspectives and preferences.

Subtheme 13. Culturally sensitive providers and education are highly valued.

Many of the women valued health education, quick feedback, short waiting time, and friendly reception. Including engaging communication skills, cultural competence, shared decision making approach and provision of personalized care. Components of successful HTN education as stated by participants include clinical practice centers that promote and educate people on the use of alternative complementary and natural treatment for HTN. Many of the women expectation of accessible HTN care includes easy to reach health education providers in a practice. education health education [P9] states "This is not my country I came here I did not know much about this BP so I want a health care practice where doctors listen to patients and educate them about their illness."

They also preferred clinics that offered medication counseling on how other prescribed drugs interact with the herbal supplements and natural remedies consumed for HTN treatment. For example, [P14] described her experience when she took over the counter anti-inflammatory supplement with hibiscus flower tea as follows:

I was taking hibiscus tea with glucosamine/chondroitin so I told my son and he goggled “what happens when you take hibiscus tea and that supplement, and he found out that you cannot take hibiscus tea with anything that has motrin or any medicine for inflammation as it increases BP (P14).

Clinics should have programs to help reduce stress, provide educational materials for HTN and invest in teaching patients about their illness, including HTN medication and dietary counseling to manage their HTN. Other women mentioned adding stress management program, free exercise programs or provisions of coupon for gym membership as necessary components of an ideal HTN program. Some other expectations of a successful HTN education program for FBAI in this study are proper history taking that helps the HCP to understand their culture and beliefs and taking the education program to where the immigrants congregate often such as town centers, faith-based organization gatherings.

A participant thought of an ideal HTN program is where there are good interaction and effective communication between nurse and doctors. Participants suggested including a cardiologist and HCP trained or from West Africa. Doctors with experience in tropical medicine or history of living in Africa would be very appropriate and ideal." “A place where HCP listen and communicate well with patients and open to answer their questions and encourage them to take responsibility for their

health.” A suitable HTN care practice should have a "clean calming environment, their bathroom is clean, and care should be appealing, just the way the doctor will talk to the patient, the kind touch not where HCP are mean." Furthermore they suggested community health outreach organization that will focus on prevention by reaching out to faith-based organizations.

In the description of the need for culturally appropriate dietary education, P1 said:

I would like a program that would first assess my background then get involved in foods like the thing I can eat. Tell me if for example, I eat cassava leaves don't put too many coconut oil or peanut butter. Look at my foods and see if I can adjust it.

If you tell me to eat cabbage, I can't eat cabbage every day (P1).

Other suggestions from the women include innovative ways to address FBAI cultural mindset towards exercise and empower Africans to explore cultural aerobic dance exercise. One of the women said the reason for a shift in FBAI mindset is because: In Africa the system compels you to exercise because few families own a car and we don't drive everywhere but it's different here. Programs that should motivate people to check their BP regularly, to really be aware of their salt intake and diet generally because they don't go to the doctor on time and when they go it's too late at times, also to educate them not to be ashamed of having the disease, they should speak about it and tell other.

Subtheme 14. Incentives are needed to facilitate effective self-management of HTN. Participants provided some examples of services that will motivate them and serve as incentives for facilitating effective self-management. Examples from the women include being intentional in educating women more during visit. Some also having a pharmacy located in the same practice or services that include faxing prescription from the doctor's office to a nearby pharmacy.

Many of the women thought that offering them a free BP cuff or coupon to purchase their own BP machine and journal for home BP recording may be an incentive. Another woman thought that provision of free bottled water and including spiritual support tailored to their faith may motivate her to take better care of her health.

I think programs that should push for people to check their BP regularly, to really be aware of their salt intake and diet generally because they don't go to the doctor on time and when they go it's too late at times, also to educate them not to be ashamed of having the disease, they should speak about it and tell others (P4).

Furthermore, research that focuses on FBAI should be a component of the program where FBAI who do not have a habit of preventive health checks and screening can be compensated to get routine BP screening and care.

Summary

In this chapter, I presented the demographics of the participants and the subthemes that emerged from the analysis including evidence of trustworthiness. As shown in Table 3, the subthemes from participants' responses to the research questions are:

RQ 1: What is the lived experience of HTN diagnosis and treatment among FBAI?

1. Participants were scared, shocked and worried at their HTN diagnosis
2. Some feel when blood pressure is low or high, others use a machine
3. Many take pharmaceutical drugs for their HTN and know how to use them.
4. Many are aware of lifestyle modifications to control HTN; few practice them.
5. Many use herbal supplements but lack information about their side effects

RQ 2: What do FBAI women believe about the causes and complications of HTN?

6. Most had knowledge of factors they believed contributed to their HTN
7. Many participants were aware of some of the complications of HTN

RQ 3: What is the experience of stress and coping among FBAI?

8. Participants recognized that stress and HTN are related.
9. Sources of stress were issues related to their health, jobs, family, friends,
10. Participants expressed stress in various ways; coping measures included faith-based activities and personal leisure choices.

RQ 4: What is the experience of FBAI in accessing health care for HTN?

11. Many had medical insurance; few had gone to the ER in the past year.

12. Many reported negative experiences with their health care professional

RQ 5: What do FBAI women believe should be the ingredients of a successful HTN education program?

13. Culturally sensitive providers and education are highly valued.

14. Incentives are needed to facilitate effective self-management of HTN.

In summary, the final categories of themes that described FBAI women's experiences about causes and treatment of HTN are:

1. Feelings about HTN
2. Pharmacological treatment
3. Non-pharmacological prevention and management
4. Use of alternative and natural remedies
5. Beliefs about causes of HTN
6. Knowledge about complications
7. Hypertension stress and coping
8. Access to Hypertension health care services
9. Opinion and Preference for healthcare providers
10. Ethnic-cultural perspectives and preferences

In the final chapter 5, I discussed the themes that emerged from the analysis, recommendations, and conclusions based on the findings from this study.

Chapter 5: Discussion and Conclusion

Introduction

I designed this phenomenological qualitative study to explore FBAI women's experiences about the causes and treatment of HTN. The five research questions were the following:

RQ 1: What is the lived experience of FBAI women regarding HTN diagnosis and treatment?

RQ 2: What do FBAI women believe about the causes and complications of HTN?

RQ 3: What is the experience of stress and coping among FBAI women with HTN?

RQ 4: What is the experience of FBAI in accessing health care for HTN?

RQ 5: What do FBAI women believe should be the ingredients of a successful HTN education program?

I used three theoretical framework to develop open ended interview questions. I conducted both telephone and face-to-face in-depth interviews with 15 study participants.

I used hand coding to identify 14 subthemes from the summary of the participants' responses and 10 final themes that subsequently emerged from the thematic data analysis.

The study results revealed what women of African descent residing in the United States experienced at their initial diagnosis of HTN and as they sought treatment. The study described FBAI women's beliefs about causes of HTN, various HTN treatments used including common alternative remedies and herbs. This study also highlighted the FBAI women's thoughts about HTN and their stressful experiences with families, work, health providers and health facilities providing hypertension services.

Interpretation of the Findings

Many FBAI residents in Washington DC Metro were born in West Africa, had higher education and worked in healthcare (Kent, 2007). In this sample, a large number of the participants were immigrants from the West African countries of Nigeria and Cameroun. All the participants were educated, many were employed, and a large number of them worked in various health professions.

Feelings about Hypertension

All the participants were concerned about their diagnosis and the fact that sometimes when their BP was high they did not experience their typical symptoms of headaches. Many of them wished they did not have the diagnosis. Educational level and occupation appeared to make a difference in the participants' understanding of HTN treatment and complications but not in their feelings about HTN. Many participants especially nurses, and women less than 40 years that thought HTN was severe illness and

that it is controllable, reported lack of adequate rest, high level of mental stress and worked extended hours.

In a study that included FBAI participants conducted by Ndikum-Moffor et al. (2015) and Schmieder, Grassi & Kjeldsen (2013) HTN was not adequately controlled. Many women in this study, worked as health professional, felt sad about their diagnosis and knew that their multiple stressful experiences affected their BP level. However, they did not consider modification of their lifestyle and self HTN care, a priority. Perhaps, the negligent attitude and failure to adopt HTN self-prevention and management measures as noted from all the health professionals in this study may be indicative of a West African cultural issue.

Beliefs about Causes of Hypertension

Family history and genetics. My study participants reported that their genetic and family history caused their HTN. Thirteen of the women reported that either their parent, sibling, or grandparent had HTN and did not express any superstitious belief that a particular person was responsible for their disease. James et al. (2014) reviewed evidence in literature that support the genetic and hereditary predisposition to HTN. More than 80% of participants in this study stated that their biological parent or grandparents had HTN. Osamor & Owumi (2010) stated that African adults' believe that evil persons or witches were responsible for their illness. The belief in witches and evil persons being

responsible for HTN was not noted in this study. However, many of the women said that their strong faith in the bible helped them manage their daily stressors.

Environment and health behavior. The present study revealed some environmental and behavioral factors such as unhealthy lifestyle, migration, and psychosocial factors the women felt could have caused their HTN. According to the AHA, the recommendation of lifestyle or health-promoting behavior for patient with HTN includes regular exercise regimen and the DASH diet that includes food low in fat and salt and high in fiber, fruits, and vegetables. FBAI in this study agreed and believed that behavioral factors such as cutting down on their salt intake, regular exercise, and taking their medications as prescribed were effective in lowering their BP.

These three behavioral factors were also reported by other studies that examined perceptions of Korean American (Han et al. 2007). However, notable in my study, although none of the women recalled that high fiber diet is part of the AHA DASH diet, many of them included avoidance of fatty foods, which is a component of the DASH diet. Another compelling finding from this study was that none of the participants mentioned tobacco and alcohol use, which have been associated with increased likelihood for HTN in previous studies (Akhmedjonov & Suvankulov, 2013. CDC, 2014, Han et al. 2007). As noted in a recent study, likely the spirituality of all the participants who are church goers may explain their lack of tobacco and alcohol use in this study (Campbell, Rodriguez, Nowakowski & Gotrace, 2017).

Sannon et al. (2014); Coulon et al. (2016) stated that socioeconomic and environmental factors could mediate between the community-level influences and perceptions that affect BP control. Though many of the women were aware of health promoting behaviors, many expressed their inability to be consistent in practicing them. Many participants in this study did not eat a healthy diet, were distressed about their social roles at home and at work, lacked adequate sleep, and did not exercise regularly.

Stress. The majority of the women believed that long-term financial and psychological stress, rather than lack of physical exercise, may have significantly impacted on their BP. All the participants regardless of length of stay in the United States shared experiences of highly stressful jobs.

Beune, Haafkens, Schuster, & Bindels (2006) found an association with HTN and stress-producing factors related to migration. Beune et al. (2006) stated that immigrants believed that meeting financial family obligations in their homelands contributed to their disease. Daramola & Scisney-Matlock (2014) also reported high level of stress experienced by immigrants who reported acculturative stress or stressful migration experiences related with segregation or language barrier. In this study many of the women reported high level of stress related to house chores, working overtime and long hours at their job and at home to meet the financial needs of their nuclear and extended families in the United States and abroad.

Participants in this study also believed that their HTN was as a result of the distress they experienced in their marital life. It appears women in this study experienced a lot of stress related to house chores and running domestic errands. However, none of the women in this study mentioned stress related to any form of discrimination.

Physical exercise. More than 80% of participants did not exercise regularly.

One of the women said "I am sedentary at work I sit most of the time during the day at work and I drive everywhere I go." Though many of the participants did not exercise regularly, they reported that they experienced better BP whenever they did aerobic exercise and ate low sodium diet for 1–2 weeks. P15 said that consistent physical exercise for 1–2 weeks helped to lower her BP but majority felt that they also needed to take their medications.

Campbell et al. (2015) showed that AA that attended church regularly recognize exercise and weight loss as part of HTN control measures and believed that regular physical exercise lowered BP, regardless of perceived cause. Similarly, many women in this study identified the role of aerobic exercise in HTN control. A greater number of the women who were health literate and well-educated such as registered nurses, dentists, and physicians were more aware of the practical steps in adopting healthy behavior to control their BP than those in other career fields.

Diet and nutrition. One participant, who was not a health professional, with a long-term history of HTN, expressed evidence of healthy dietary behavior for controlling HTN. Participants reported some personal dietary habits that they believed contributed to their HTN, such as high consumption of coffee and foods high in fat, salt, and starch. The CDC stated that the consumption of caffeinated products remains a controversial risk factor for HTN. In a recent prospective study Rhee et al. (2015) did not link coffee consumption to development of HTN in women. However, in this study two participants expressed improvement of her BP when she reduced her daily coffee intake. According to Venters and Gany (2011); Gross, Anderson, Busby, Frith & Panco (2013). FBAI that recently arrived in the United States may not be familiar with cooking and eating American food and prefer their high sodium ethnic food to American food. Many participants in this study with various length of stay in the US wished they could get dietary counselling that integrates African ethnic food in the menu.

Knowledge about Complications of HTN

Many participants were able to mention at least one complication of HTN. More than 50 % of the women stated heart attack and stroke and described HTN as the “silent killer.” I noticed they were more concerned about developing stroke than other complications and many of them did not mention kidney failure According to P6, "stress causes stroke if you are hypertensive." Many of the women were more afraid of having a stroke than other complications of HTN.

A few of the women said they took baby aspirin at bedtime or when they felt a headache because they believed HTN could kill someone while asleep in the night. P14 said: "I could have stroke, heart attack, or go to sleep and don't wake up." Another participant expressed concerns about stroke and mentioned:

I know I could stroke out and I think that scares me a lot, so that sometimes at times I think am having irregular heart beat then I start panicking thinking my pressure is high, then that draws my attention, or my head starts hurting when and I say maybe my BP is high and maybe I have a stroke (P14).

According to WHO (2013) and CDC (2014) recommendation, women often present with atypical symptoms during a heart attack. The participant in this study were able to recall the warning signs or symptoms of stroke and aneurysm. However, none of the participants reported the rare atypical warning symptoms.

Pharmacological and Non Pharmacological Prevention and Treatment

Many of the women believed that there is no medical cure for HTN. Akinlua, Meakin and Freemantle (2017); Sannon et al. (2014) in their studies showed that Haitian immigrants in the United States and Nigerian immigrants in the United Kingdom believed that there is no cure for HTN but taking medication may be helpful. There were varied opinions regarding their belief about a future cure for HTN.

In this study, some of the patients expressed frustration with modern HTN medicine as they found multiple HTN medications their doctors have placed them on very ineffective. Thirteen of the participants in this study are not hopeful that a cure could come up because of the hereditary nature but believed that with taking medications and faith in God they will be 'healed.'

The majority of the participants in this study were able to recall their prescribed HTN medications and these included: Lisinopril, diovan, metoprolol, hydrocholorthiazide, Norvasc. However, many expressed dissatisfaction with the side effects of the medication or lack of effectiveness in BP control. According to James et al. (2014) Lisinopril one of the ACEIs should not be the initial choice of treatment for patients of African descent with chronic kidney disease. Participants were especially dissatisfied with the side effects of Lisinopril and reported unpleasant side effects resulting in their switching medications or skipping their daily dose. Other side effects of HTN drugs reported in this study included clumsiness, fatigue, headache, and drowsiness.

According to Tavares & da Silva (2013) patients stopped taking their HTN medications because of their unpleasant side effects. Ai Disi et al. (2016) also stated that patients' dissatisfaction with prescribed pharmacological drugs contributed to widespread use of herbal supplements and alternative medicine. Many of the participants stated that their experience of taking HTN medication on a daily basis was annoying/irritating. One of the women said "the metoprolol makes me feel very sluggish."

Use of Alternative and Natural Remedies

All the participants reported occasional or habitual consumption of herbal remedies such as garlic, ginger, Chinese oobong tea, organic hibiscus flower tea, beet root. These herbals were either ordered online or purchased from local stores.

Previous studies by Seck et al. (2017); Liwa et al. (2014) have shown wide utilization of medicinal plants for HTN treatment. According to a systematic review of literature by Liwa et al. (2014) common native herbs used to treat HTN in Africa included bitter leaf, aloe, papaya, and lime juice. The FBAI in this study mentioned other complementary herbs they used for HTN treatment that include Moringa, hibiscus flower tea, red beet, beet juice, apple cider and garlic.

Some of the women believe that herbal remedies can only be used to complement modern medicine while some think they could be used as a substitute to HTN medications prescribed by their health care providers. As stated by Woolf and Bisognano (2011) many patients are exploring alternative remedies for HTN. In this study many of the women including those that are not using herbal supplements regularly expressed interest and preference to herbs, supplements and a wide-range of non-drug interventions for the treatment of high blood pressure.

Popovic-Lipovac and Strasser (2015) and Zlotnick et al. (2015) showed that FBAI women preferred to use traditional herbs from their countries of origin to treat HTN.

An unexpected finding from this study is that though all the participants have either used or heard of at least one herbal supplement known to lower and control BP; the women verbalized concerns about the safety of using those herbal supplements on a long-term. They believed that modern medicine is relatively safer than the herbals. Also, many of the participants believed that diet modification, regular exercise, and taking prescribed medication may be more effective than herbal remedies in managing their HTN.

Findings from other studies on herbal use among multiethnic group of patients showed that those who use herbal supplements do not disclose such information when they are providing health information to their HCP (Kuo, Hawley, Weiss, Balkrishnan and Volk, 2004). In this study many did not disclose to their HCP the herbal supplements they were taking. One of the participants who used hibiscus tea and red beets for a long term to control her BP did not inform her HCP.

According to Ai Disi et al. (2016) and Anwar et al. (2016) that have examined the effectiveness of herbal supplements, patients need to be educated on safe consumption of these supplements as some herbs could also raise BP. Campbell et al. (2015) and Frosch et al. (2008) reported that many HCP do not endorse use of herbal supplements in place of their prescriptions. Perhaps, lack of HCP emphasis or endorsement of herbal treatment modalities as also reported in this study may have influenced FBAI attitude and concerns for herbal treatment use for HTN

In recent research studies and clinical trials reviewed by Ai Disi and colleagues the herbs and spices most commonly used for HTN treatment includes garlic, Chinese goldthread, hawthorns, saffron, Chinese sage, ginger, black cumin, cilantro/coriander, ginseng. A systematic review and meta-analysis of randomized controlled trials showed evidence of BP lowering effect of hibiscus tea in participants that consumed 240 mls of tea three times a day (Sahebkar et al., 2015). To corroborate the effectiveness of hibiscus tea, one of my participants reported that she is no longer requiring three of her BP medicines since she started drinking hibiscus tea twice a day and snacking daily on 5–10 cubes of red beets.

The effectiveness of hibiscus tea in a recent prospective randomized drug trial that compared hibiscus flower tea and ramipril also showed significant natriuretic effect on patients that took 320mg capsules of hibiscus plant powder twice a day (Seck et al., 2017). Furthermore, participants in this study also reported complementary and alternative treatment measures. Choi et al. (2017) reported various leisure and relaxation techniques used in lowering BP. Some of the alternative measures reported by the women in this study are listening to gospel worship music, meditating on the scriptures, praying and having daily devotion, bath tub water soak, watching funny television shows.

Access to HTN Healthcare Services

Levesque et al. (2013) described access as identification of health care services such as clinic, doctor and hospital.

Immigrants' dissatisfaction with health care has been attributed to cost, accessibility and availability of medications (Ai Disi et al., 2016). The women's ideas about access to HTN services included ability to make appointments, seen at their own convenience at an affordable rate. As seen in this study women valued convenient location, and easiness in getting appointment and feedback from their HCP.

FBAI in this study identified and chose providers based on cost, location of their clinics, and their ability to easily approach, interact with them. FBAI in this study valued a HCP that is willing to listen patiently and consider their opinion in their care plan. Study that examined cross- cultural competence of health care givers showed that communication mattered much in establishing rapport between immigrants and their medical providers (Torán-Monserrat et al., 2013). The ability of patients to freely communicate their feelings, opinions and preferences to their health care givers. Though many of the participants in this study had health insurance, those without health insurance stated that they only followed-up with their doctors when they needed refills and are able to pay for both office visits and their medications.

Opinion and preference for Healthcare Providers

A study revealed uncaring attitude of hospital staff that led to use of native herbs in place of modern medicine (Liwa,et al., 2014). The participants shared their experiences with medical care and HCP and stated that they were “open” comfortable and happy with check up with their primary care providers or cardiologists on a regular basis.

However one of the participants said "I refused to go and see my primary care provider for more than one year because she told me my organs are shrinking “

According to Woolf and Bisognano (2011) each patient has unique and peculiar lifestyle and background. Health prescribers treating HTN should know patients and what they will and will not embrace so they can tailor therapies that are suitable for their patients' habits and that will hopefully make a difference for them(Woolf and Bisognano, 2011). One of the participants passionately expressed the need for clinicians and doctors to consider individual patients characteristics before doing 'drug trials that do not work 'with patients." One of the participants said the type of food examples used in dietary education may not be the ethnic food that she enjoys. Another patient described her experience elaborately:

As a physician myself, the way medicine is we have to personalize it... you do not want to treat across the board, and yes the latest drug in the market the drug reps come and they tell you about it and you want to try it so that was the approach, treat based on what is available and if it does not work you move to the next on the list and that way it truly was more of a trial and error and I experienced that myself, later I came to realize that some work well for some people while some does not work for others so there should be a way of finding out maybe from the medical literature where it would say drugs that work better for people from Africa (P9).

Many of the participants were satisfied with their current health care provider. However, a few of the participants reported sad experiences with emergency room care, and long waiting in their primary care visits. A woman whose doctor did not explain the side effects of one of her pills said:

Well, I started this with a water pill and my doctor primary care never told me that when you are taking the water pill you'll have to be on potassium so at one point I had no potassium in my body and I went to the emergency room (P4).

Coulon et al. (2016) showed the effectiveness of culturally competent and appropriate HTN health programs.

Many of the women also said that cultural programs that advocate safe use of various medications at the community level may encourage FBAI to follow medication guidelines from their health providers.

Hypertension, Stress and Coping

Studies have revealed association between social support, chronic psychological stress and HTN (Artinian, Washington, Flack, Hockman, & Jen, 2006; Zlotnic et al., 2015). Many of the women shared stories of psychological stress from the trauma of grieving the death of a loved one and infertility. Major sources of stress for women in this study emerged from their multiple roles as working professionals, mothers, wives and caregivers. Women recalled that in their African home countries there were more domestic support. Unlike in the United States where they have no access to family members and friends that could help them in housework.

Several studies have shown various coping measures for handling stress such as meditation, dance, reading, music therapy, spiritual healing, prayer and lying down had BP lowering effects (Liwa et al., 2017. NCCAM, 2016. Schlomann & Schmitke, 2007). Participants described and gave examples of measures they use to relieve stress such as taking vacation, singing, listening to music, worship songs, meditating on 'the word of God', sleeping, watching funny TV shows, soaking in water and eating out.

Ethnic-cultural Perspectives and Preferences

In this study, women shared challenges in adopting the dietary education that does not consider ethnic African food preferences and lifestyle. [P15] elaborated on what she considered should be incorporated in FBAI HTN care as:

Developing an exercise in the form of recreation because as a foreign-born African, exercise is not part of the deal, there is no room for it in my calendar but I expect a comprehensive hypertensive health care program that includes exercise in the form of recreation so that you are exercising and having a break from life. Paying attention to the diet, often even the calorie king regarding losing weight there is no equivalent regarding what a bowl of fufu, fried plantain, the kind of beans we eat am not sure is the same calorie value as black eye pea. There is no equivalent to what egusi soup has so it's a challenge for me now as I just estimate and put something inside it which may be wrong. There is no equivalent to cow foot, as a piece of steak has and those are an integral part of what people eat in my culture, how do I translate palm oil in my do not touch list as a hypertensive (P15).

FBAI women in the Washington D.C Metropolitan area expressed negative reactions when approached to be recruited in a cancer study (Ndukwe, Williams & Sheppard, 2013). FBAI believed that community members' awareness of their HTN illness may generate a social stigma (Beune et al., 2006). Wafula & Snipes (2014) showed the need for culturally appropriate programs for immigrant communities. In this study participants were reserved about sharing their HTN experiences during the recruitment phase until I shared my story and journey living with HTN.

FBAI are less likely to recognize their HTN status and may be in denial of diagnosis (Frosch et al., 2008, Popovic-Lipovac&Strasser, 2015). Many participants in this study also expressed denial of their illness for extended period of time after their diagnosis. Many did not take the medication initially prescribed for them because they did not believe their doctor's diagnosis was real. Some of them especially those diagnosed at an early age believe that they will not take their medicine for the rest of their lives. Though some who had marital issues claimed that their spouses may be the cause of their illness, they also recognized that their busy life outside home may also be additional risk factor.

None of the participants blamed spiritual forces for their HTN, though many believe that their faith in God reduces their concerns about their diagnosis and its complications. These findings are contrary to popular literature reports African belief that HTN may be due to spiritual forces like '*witchcraft*.'

FBAI may be reluctant in accepting diagnosis of HTN disease (Beune et al., 2006; Osamo & Owumi, 2010). In this study many of the women did not agree that their diagnosis of HTN as related to them by their HCP was true. They thought their elevated BP was temporary and attributed the high readings to the stressors they experience during their check-up with a HCP.

Research has showed immigrants' stressful experiences in the community related to racism (Frosch et al., 2008, Popovic-Lipovac & Strasser, 2015). Many immigrants with longer duration in the United States develop social ties within their workplace and communities (USDC, n.d). Many FBAI women in this study have worked for many years in the United States. Racial discrimination did not emerge as a stressor in this study. However, those that are working in the nursing field said that their high level of work related stress was due to 'difficult and heavy' patients in their nursing jobs.

Immigrants who are recent visitors lack strong social network and in African households domestic house chores are traditionally reserved for women (Sanon et al., 2016; Campbell et al., 2015; Tavares & da Silva, 2013). Women expressed lack of help with house chores. Community-based education and awareness to include men in household work to enhance family ties and support working mothers may be included in the FBAI community HTN prevention programs.

Theoretical Framework

I could have applied only the health belief theoretical framework to explore the experiences of FBAI in this study.

However the additional use of TSC and PCAHC model provided conceptual framework that facilitated a better understanding of FBAI beliefs and perception about managing HTN, stress and coping measures. The inclusion of PCAHC provided insights on approachability of HCP and affordability of care.

The Health Belief Model.

Perceived Susceptibility. The participants perceived HTN as a severe disease that threaten their lives as one of the women said “anything bad can happen to me any time” Participants were able to state complications of HTN. “I believe if my blood pressure is too high it can cause me to have a stroke um and cause me to pass out”

Cues to action. In this study participants provided examples of what they did that prompted them to take their BP medicine as prescribed and engaged in other HTN health-promoting behaviors. For instance: “I leave a bottle of water with my morning medicine in my bathroom sink where I brush my teeth when I first wake up in the morning” Another woman had an automatic timer on the cap of her prescription bottle that alerts her when to take her medicine. Another woman kept BP machine and each bottle of her medication at work and at home so if she is in a hurry and forgets to take her medicine,

she can take it at work. “I read food label a lot, to select food like cereals with lower sodium content and I also do not eat Chinese food”

Participants that reported personal or family history of stroke including a woman whose child was also diagnosed with HTN at a teenage age appeared to be more committed to healthy lifestyles such as avoiding salty food and exercising regularly. Surprisingly some of the participants who reported that their family members have died of heart attack including two women who were health professionals and aware of the complications of HTN were neither proactive nor keen about seeing their doctor regularly for BP checkup. A participant described some measures that facilitate her remembering to take her medicine every day as “Just take it every morning even before I brush my teeth”

Perceived benefits. A participant reported her perceptions about the benefit of taking their medications every day as prescribed by their doctor. I accepted that a long time ago, I started taking the pills at 43 today am 65, I have no problem of taking a pill if it will keep me alive” “it’s helpful it will save your life ”“I don’t like it so I try everything I can to reduce the number of pills I have to take, So one day my son googled things that can treat high blood pressure then hibiscus tea came up so he started drinking hibiscus tea like it was going to go out of style and today he is not on any medication. Sometimes I google a lot of things to see if they will work.

Perceived Barriers. A woman has not been able to see her doctor in one year because of conflict in her schedule “either the doctor cancels or I cancel.” “I stopped taking medicine for a while because it was not working” and I skip a few times a week because the medicine make me tired and ‘sluggish’ At times I forget to take it because am hurrying to work or am too tired and go to sleep.

Self-efficacy. Many participants expressed confidence in their ability to check their BP at home but they are not able to maintain a regular exercise schedule in spite of their experience of better BP control when they are very physically active. In a previous study that examined HTN in a Nigerian population, participants stated that HTN is not preventable (Osamor & Owumi, 2010). However, my study showed that all the participants believes that though there may be no cure for HTN but it can be controlled. A woman described her concerted effort to take her medicine daily despite the challenge in recalling. Like I said it's a pain in the neck sometimes when I just remember I jump and say let me go take my medicine because my doctor advised me to take it when I'm going to bed and I take it with my baby aspirin because I believe sometimes in your sleep you know anything can happen.

All the women expressed confidence and described how they measured their BP as ‘in a relaxed sitting position with cuff wrapped around their upper arm’ This technique is supported by evidence on proper HBPM that includes sitting posture in a relaxed state using upper arm and appropriate cuff size (NHLBI, n. d & 2015; Niessen et al., 2014).

The Patient-centered Access to Health Care Model

African immigrants in the United States may experience barriers to health-care access (Adu-Boahene, Laws & Dapaah-Afriyie, 2017). In this study, only two of the 15 participants reported no health insurance coverage and those two did not also have a personal means of transportation and resorted to going to nearby pharmacy for BP measurement and enrolled in clinical research trials that provided some form of health care incentives.

Though participants in this study did not disclose their immigration status, it appears that those that reported longer length of stay in the United States, had either private or government funded health insurance coverage were able to find a doctor who ‘listens’ to them and whose offices are closer to their homes. One participant in this study did not have a medical insurance but she had a family member who was a medical doctor that prescribes her medication. However she was not checking her BP despite a BP measurement machine was available.

Positive healthcare experiences within the health system could be facilitated by HCP willingness to ask about use of herbal remedies (Frosch et al. 2008; Sanon et al., 2016; Campbell et al., 2015; Tavares & da Silva, 2013).

Participants in this study did not disclose the herbal supplements they are using to their health care providers because they believe that their HCP may discourage the use.

Many of the participants have medical insurance and their ideas of what they considered good access were in terms of location of the primary health and specialist services and satisfaction with care and caregivers and not necessarily the cost of care. The women valued one-stop health care services in one location, friendly communication with HCP, and flexibility in the hours of operation in the practice.

Transactional Model of Stress and Coping

Stress related to loss of loved ones, working too much without taking a rest, lack of money were also reported in a study that examined Nigerian immigrants with HTN in the United Kingdom(Akinlua, Meakin, Freemantle, 2017). Studies that examined stress in AA and other immigrant populations, mentioned stress related to discrimination based on language or ethnicity (Agyei et al., 2014; Krieger et al., 2011). Participants in this study reported multiple stressors and high level of both psychosocial and financial distress. They also think that their high level of stress when they were deprived of sleep. Most of them believed that their long term stress while in school and working and having children at the same time were a cause of their HTN.

Coping measures for relieving stress reported in recent study include meditation, dance, reading, music therapy, spiritual healing, prayer and lying down (Schlomann & Schmitke, 2007; Zlotnic et al., 2015).

Participants in their appraisal of their stress mentioned their understanding of what constituted their individual stressors and described the measures they used in coping such as taking vacation, singing worship songs, listening to music, meditating on ‘the word of God’, sleeping, watching inspirational or funny television shows, soaking in water and eating out.

Limitations of the Study

There are several limitations in this study. This study design included a non-random purposive convenience sample of adult FBAI women with self-reported diagnoses of HTN. This research was on 15 foreign-born English speaking West-African immigrant women from Ghana, Nigeria, Cameroun, Sierra Leone and Liberia living in Maryland and Washington DC. Though 15 participants was adequate for this qualitative study, 15 participants in this small sample had a college degree, attended church, worked in health or allied health fields and familiar with HTN disease process. Therefore, the study findings may not be representative of all FBAI women with HTN and may not be generalizable to the larger African-born immigrant population in the United States.

Recommendations

This study showed many of the FBAI women were knowledgeable about the causes and treatment of HTN. It described the various non-pharmacological measures they used to treat their illness that may contribute to current literature.

This study has revealed the common sources of stress FBAI women experienced that may need to be considered in stress management classes. The results of this study showed dietary choices of ethnic food that may need to be considered in designing dietary counseling of FBAI women with HTN. This study showed FBAI views, cultural cues, opinion and experiences with their health care providers which may be helpful in facilitating cultural sensitive, care and treatment of HTN. There is need for more explorative studies and clinical trials involving larger sample for examining the common ethnic herbs and spices mentioned by FBAI in this study that have not been well studied to confirm their effectiveness in HTN control.

This study suggests that FBAI experience lots of work related stress; lacked help in performing their household tasks and they did not exercise regularly though they knew exercise may help control their HTN. Studies that examine the impact of FBAI women's social support such as home keeping helps or employer funded stress relieving activities on adherence to HTN prevention measures may be appropriate for future research. Does cultural group exercise program influence long-term adherence of weight control in FBAI women with HTN?

Is there a correlation between health literacy, fluency in English and adherence to HTN treatment? Does spirituality play a significant role in stress relief and adequate control of blood pressure in FBAI with HTN?

Implications for Positive Social Change

The findings from my study have potential for positive social change. Many women expressed challenges in adopting the AHA DASH diet and mentioned ethnic food they consumed regularly including those they thought were high in sodium which can be used for culturally sensitive dietary counseling. My study participants expressed some frustrating experiences with their medical providers and described aspects of their medical providers' practice that appealed to them. They also described their expectations from a clinical practice that will meet the cultural needs of FBAI. These findings could help in educating clinicians and health providers serving FBAI women with culturally effective HTN education and counseling tools, thereby improving the health status of FBAI's communities in the United States.

Participants described and gave examples of measures they used to relieve stress that have also been seen in other studies. Perhaps integrating these findings in designing a stress management program for a medical practice that serve FBAI communities may potentially facilitate a more efficient HTN care program for FBAI. This study also showed common herbs FBAI used as complementary treatment for HTN. These herbs can be further examined in clinical trials to confirm their effectiveness in HTN control.

Red beet which one of the participants used with hibiscus tea and reported long term effectiveness needs further research as potential long-term adverse effects of these herbs are not well understood. Hence there is need for studies that compare efficacy and safety of long term use of red beets and hibiscus flower tea. Health care providers could use findings from this study to plan discussion about use of alternative traditional remedies into their FBAI patients visit in order to educate them on safe use of those products along with their prescribed medications.

Conclusion

This phenomenological study explored experiences of FBAI women in Washington DC metro area about HTN illness. It described FBAI cultural beliefs about causes and management of HTN. The women's description of their self-management showed that they determined if their BP was elevated or low by how they felt and not necessarily by their actual BP values. Many of the women did not take their HTN medications for few days a week in spite of their awareness of complications and fear of death from HTN.

In their use of natural remedies, apple cider, hibiscus tea and red beets were recurring examples that they have used for many years and found an adequate substitute or complement to modern medicine prescribed by their HCP.

Though they understood the vital role of regular physical activity in HTN treatment, they expressed their frustration with multiple tasks and busy lifestyle which does not allow them to exercise regularly. It appears from the result that many of the barriers the women experienced in their HTN treatment was attributable to their busy, stressful jobs and the difficulty in finding the medications that controlled their BP well with minimal side effects. Other details that emerged from this study include FBAI women's perception about their stressors and the practical measures they used for stress management.

Their ideas about stress provide HCP a better understanding of a more efficient approach to caring for HTN in this community. Participants in this study suggested ways to address essential elements of improved access to care and how they valued better communication with their HCP. FBAI in this study also expressed need for exercise and dietary counseling with a West African cultural appeal. This study has also revealed that some health care givers were not willing to discuss use of herbal remedies with their patients, which may potentially contribute to poor adherence to other, recommended treatments.

Many of the FBAI in this sample used various complementary remedies for HTN treatment but did not disclose all of them to their HCP. It is important that clinicians and community health educators develop a strategy of establishing a rapport with FBAI with HTN.

Establishing a rapport may enable them discuss the CAM they use to avoid complications and promote safe use of those herbal remedies. Especially, the red beets and organic hibiscus tea revealed by participants in this study to lower BP on a long term.

In conclusion, as seen in this study, there are subtle yet meaningful cultural beliefs and ideas which ultimately inform how to approach care of FBAI with HTN. FBAI ideas, opinion, preferences and priorities as seen in this study regarding causes and treatment of HTN can be very useful for public health researchers and educators interested in designing culturally effective HTN programs. Additional studies on the lived experience of various FBAI sub-groups living in other regions of the United States would provide comparative data to this study.

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Appendix A: Invitation/Recruitment Letter

My Name is Assumpta Ude. I am a PhD student at Walden University School of Public Health, and a Nurse Practitioner. I am originally from West Africa. I will be conducting a study that explores perceptions of the causes and treatment of hypertension among English speaking foreign-born African women aged 18 to 65 who have a history of hypertension, and are living in the Washington Metro area. If you satisfy these criteria, you are invited to participate. This will involve a face-to-face interview that may be recorded. All responses from the participants are confidential.

Appendix B: Participant Demographic Questionnaire

1D# -----

Date-----

1. What is your age?
 - 18-25
 - 26-35
 - 36-45
 - 46-55
 - 56-65
2. How old were you when you arrived to the US?
 - Less than 18
 - 19-25
 - 26-35
 - 36-45
 - Above 45
3. What is your West African Country of Birth?
4. Where is your state of residence in the US?
5. How long have you lived in United States?
 - Less than 5 years
 - 5-10 years
 - 11-20 years
 - 21-30 years
 - 30 years or more
6. How fluent are you in English?
 - Very fluent

- Somewhat fluent - Understand and Speak a little
- Not fluent -No English

7a. Do you have health insurance?

7b. If Yes-What Type?

a. Self-pay

b. Medicaid /Medicare

c. Private insurance

d. Affordable Care/Other government insurance or health coverage

8. Has a health professional or provider ever told you that you have high blood pressure or hypertension (HTN)?

9a. Have any of your family members ever had HTN?

9b. If yes, please tell me which: siblings, grandparents or parents

10a. Are you working in the US at the moment?

10b. If so, what is your work?

11. How long have you been doing this work in the US?

12. What is your level of education?

- Elementary school
- Secondary/High school graduate
- College graduate
- Advanced degree
- Other: _____

Appendix C: Interview Questionnaire

RQ 1: What is the lived experience of FBAI women about the causes and treatment of HTN?

Perceived Susceptibility

1. How do you feel about having hypertension?
2. How can you tell that your blood pressure is good?
3. How do you know that your blood pressure level is high?
4. What do you believe are the possible reasons you developed HTN?
5. What do you think about certain habits affecting HTN?
6. Which activities do you think affect your blood pressure?
7. What types of food do you think affect your blood pressure?

Perceived Severity

8. Describe what could happen if your BP is too high.
9. How do you feel about taking BP medicine for the rest of life?

Cues to action

10. Describe how you are managing your hypertension.
11. Is there anything you do or have been advised to do because of your HTN?
12. Describe the various things you use to treat HTN.
13. What are your thoughts about alternative ways you can manage your HTN?
14. What are your thoughts and beliefs about seeing a doctor for HTN?

15. What is your opinion about using traditional herbal remedies for HTN?

Perceived Barriers

16. Describe your experiences with taking your BP medicine regularly.

17. Describe your experience with health care givers treating your HTN.

Self-Efficacy

18. What are your thoughts about checking your blood pressure at home?

19. What is your understanding of taking blood pressure medicine regularly?

20. Describe your experiences with having to take your medicine every day.

21. What do you think about a possible cure for HTN?

22. Describe how you do your BP check?

23. How confident are you that you can manage your HTN effectively?

RQ2: What is the lived experience of FBAI women about the role of access to health care in the treatment of HTN?

24. Describe your experiences seeking medical help for hypertension in the past year.

25. Describe your experiences with access to health services

26. How do you get to your health care facility or doctor's office?

27. Describe the reasons you sought health care in the past one year

28. Describe your experiences receiving medical treatment in a health care facility

29. What do you think about the distance from your house to your local hospital?

30. Describe how you learned about where to go for healthcare

RQ3: What is the lived experience of FBAI women about the role of stress in the causes and treatment of HTN?

31. Describe your ideas about stress

32. How do you know you are under stress?

33. Describe the causes or sources of your stress

34. Describe what you think about stress and HTN

35. Describe how you express stress

36. Describe the measures you use to reduce stress

RQ4. What is the lived experience of FBAI women about the ingredients of a successful HTN education program?

37. Describe what you expect from a HTN healthcare practice or program

38. Describe what you consider a suitable health care service for HTN

39. Describe other dimensions or components you desire in a HTN health program

40. What is your opinion about what should constitute a HTN?

Program for FBAI?

Appendix D: Screening Interview Protocol

Date-----

Location-----

Name of Interviewer:_____

Name of Interviewee_____

1. Do you have high blood pressure or hypertension? Yes No
2. If yes, are you on medication for hypertension? Yes No
3. Are you fluent in English? Yes No
4. Are you born in any of the West African countries? (Name it)
5. Are you pregnant? Yes No
6. Are you between 18 and 65 years? Yes No

Appendix E: Flyer

HYPERTENSION IN FOREIGN-BORN AFRICAN WOMENInvitation to join a research study

I am doing research on hypertension, a very common illness among foreign-born African women living in the United States. This is a confidential study, and the results will be used to create better programs for women like you with hypertension. Volunteers who take part in the interview will receive a blood pressure log wallet card and a \$10 calling card to West Africa.

If you:

- were born in West Africa and currently living in the US
- have ever been diagnosed with hypertension,
- are fluent in English,
- are aged between 18 and 65, and
- are interested in participating.