4-8-2022

Perceptions of hypertension and treatment adherence in impoverished hypertensive adults: A qualitative analysis

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Perceptions of hypertension and treatment adherence in impoverished adults: A qualitative analysis

An Honors Thesis submitted in partial fulfillment of the requirements for Honors in *Waters College of Health Professions.*

By

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Under the mentorship of *Dr. Jody Langdon*

ABSTRACT

Hypertension is a global public health crisis. It is the largest risk factor for cardiovascular disease, which is the leading cause of death globally (CDC, 2021). While it can be managed, there are additional barriers that hypertensive impoverished populations face with regards to hypertension management. The purpose of this study was to explore knowledge, attitudes, and perceptions of hypertension, and treatment adherence in impoverished hypertensive adults. Interviews were analyzed using thematic analysis and were explained within the context of the health belief model. The results show that there was a lack of understanding of hypertension and its long-term effects. Most participants were able to describe the physical manifestations of hypertension they experience in daily life. Several participants identified medication and dietary changes as a treatment prescribed by their physician; however, few participants made note of any other lifestyle modifications recommended. When asked to discuss barriers to treatment adherence, cost of medication, difficulty taking medication, difficulty forming habit of medication adherence, and cultural influences on diet were noted. There were mixed attitudes regarding their hypertension diagnosis, ranging from regret to confusion to confidence in ability to manage it. This study highlights the need for increased hypertension education in impoverished hypertensive adults.

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Dr. Steven Engel

April 2022

Waters College of Health Professions

Honors College

Georgia Southern University
Table of Contents

Acknowledgements

Throughout the writing of this thesis, I have received a great deal of support that without, this thesis would not have been possible.

I would first like to thank my thesis mentor, Dr. Jody Langdon, for her valuable guidance and expertise in the research process. You have continually encouraged me throughout this process and helped me see the value of the research process.

I would like to thank the Hearts and Hands Clinic for their support and collaboration in allowing me to use their facility to conduct this project. I am thankful to have been able to work with an organization so devoted to the healthcare of the impoverished and medically underserved. Specifically, I would like to thank the patients who were willing and eager to participate in this project.

Next, I would like to thank Georgia Southern University and the Honors College. Thank you for providing an environment built on honor, academic success, and pursuit of knowledge. You have provided me opportunities, such as this, that have helped develop me into a better student and person.

Lastly, I would like to thank my family and friends for their continuous support and encouragement throughout this process. I appreciate you all more than you know.

Introduction

Hypertension is a global public health crisis. It is the largest risk factor for cardiovascular disease, which is the leading cause of death globally. In the United States, approximately 47% of people have an active diagnosis of hypertension. Hypertension affects over one billion people worldwide, and this is expected to continually increase (CDC, 2021). To treat hypertension, lifestyle modifications and pharmacotherapy are typically recommended. Lifestyle modifications are typically the first line of treatment and include smoking and alcohol cessation, dietary changes, and increased physical activity. However, if an individual's blood pressure has not lowered to a normal value, pharmacotherapy will likely be pursued with continuation of lifestyle modifications (Nguyen et al., 2010). However, treatment is not always this simple. There are multiple factors that can confound hypertension management, creating barriers to treatment.

There is abundant research on barriers to hypertension management in the general population. Providers reported qualitative barriers as lack of knowledge, skills, motivation, social influence, difficulty breaking habits, availability, accessibility, and affordability. Patients also reported lack of knowledge, skills, motivation, difficulty breaking habits, availability, accessibility, affordability as barriers (Khatib et al. 2014), as well as medication, unhealthy diet, and perceived lack of control (Long et al. 2017).

Before assessing the relationship between hypertension knowledge and treatment adherence, basic understanding of hypertension among patients must be addressed. Bilal et al. (2016) researched hypertension knowledge, awareness, and self care practices among hypertensive adults. They concluded there was inadequate basic knowledge of hypertension among cardiac hypertensive patients. A lack of understanding of

hypertension was also reported by Sanne et al. (2008). Both studies highlighted little knowledge regarding hypertension longevity, normal systolic reading, and complications associated with hypertension such as renal failure.

Several studies have further explored the relationship between knowledge of hypertension management and treatment adherence. One study concluded that patient knowledge of hypertension management is a significant independent determinant of treatment adherence (Jankowska-Polańska et al. 2016). Likewise, there has been reported significant positive correlation between knowledge of hypertension and attitude regarding diagnosis, a significant positive correlation between knowledge of hypertension and practices of lifestyle modifications, and a significant fair correlation between attitude and practice (Buang et al. 2019).

Studies have also been conducted to explore hypertension knowledge among impoverished hypertensive adults. The majority of participants associated hypertension with increased blood pressure, but other associations included physical symptoms (i.e., headaches and sweating), and hyperactivity. In a study by Moczygemba et al. (2012), less than half of participants noted the long-term health complications of uncontrolled blood pressure. A limited understanding of hypertension, blood pressure goals and lifestyle modification recommendations was a common theme. Interestingly, the most reported barrier to lifestyle modification recommendations is the transient lifestyle of being homeless (Moczygemba et al. 2012).

Culture plays an important role in the everyday life of many individuals, including their food choices. Several studies have been conducted to explore the relationship between culture and hypertension. Horowitz et al. (2004) examined the

importance of cultural sensitivity in relation to hypertension management. Participants reported physician-recommended dietary changes difficult to follow for several reasons. First, recommended dietary changes were not always feasible or cohesive with family life and social situations in the context of culture. In addition, the recommended dietary changes were reported by participants as an unwanted deviation from traditional and preferred culture diets. With the importance of food as a social context within culture, moving away from traditional cultural diet can feel socially isolating. These concepts were also emphasized by participants in a study conducted by Long et al. (2016). This study looked at the knowledge, attitudes, and beliefs regarding hypertension and hyperlipidemia among African Americans. Participants discussed cultural implications in diet as a barrier to treatment management. Specifically, they noted the influence of African American culture in passing down genes, habits, feelings regarding illness and disease, and food traditions.

Based on these studies, it is apparent that cultural influences in dietary choices must be considered when discussing dietary changes with regards to hypertension management. In some cases, even small modifications to diet while still maintaining cultural ties is possible. For example, Rankins et al. (2017) explored this with African American soul food and diet, determining whether such changes could increase adherence to the DASH diet, and still respect the cultural importance of food. They found that slight modifications in the traditional, soul food recipes decreased excess fat, cholesterol and caloric content. In addition, participants reported enjoyment of the modified food, and felt it maintained its cultural influence and importance.

As previously mentioned, impoverished populations face unique challenges in hypertension management. On any given day, there are approximately 630,000 American who are facing homelessness (Sckell et al. 2016) with countless more experiencing severe poverty. The Supported Accommodation Assistance Act (1994) states a person is considered homeless if he or she has inadequate access to safe and secure housing. Defining poverty poses a slight challenge, but the Census Bureau defines it as a family income that is less than the income threshold for the family size and composition. Since 1990, the homeless population has been aging, with about half of the homeless population to be over 50 years old. Prior to 1990, almost 90% of the homeless population was younger than 50 years old.

There is abundant data showing that aging is associated with an increase in chronic health issues and premature mortality (Henwood et al., 2017). However, the homeless and impoverished populations face specific health vulnerabilities (Groton et al., 2020). In one study, the most reported chronic physical health condition among homeless participants was hypertension (52%), followed by chronic respiratory disease (29%), diabetes (24%), cancer (11%), and heart failure (8%) (Henwood et. al 2017). In comparison, Asgary et. al (2016) reported rates of several chronic conditions among homeless adults in New York City shelter-based clinics, with hypertension being reported most often, (40.1%). Compared to the general population, this percentage was much higher. Likewise, the homeless population with stage 2 hypertension was 15.8% and the general population was a mere 0.03%. However, this is not a new phenomenon. A study conducted in the early 1990s found that with the exception of alcohol abuse, hypertension

was the most common health problem in the homeless population, affecting approximately 14% to 25% of this population (Kinchen & Wright, 1991).

Based on current literature, it is apparent that hypertension rates tend to be higher among homeless and impoverished populations. However, this population is prone to barriers to treatment that the general population might not have to face. Asgary et. al (2016) identified several factors likely to complicate chronic disease management in impoverished populations. These include lack of access to primary care (cost, transportation), mental illness and substance abuse, discrimination in the healthcare system, and barriers to therapeutic lifestyle choices. Although assistance programs are available, Medicare and Medicaid do not automatically eliminate this barrier to accessibility. While someone might be eligible, they might not have the means to apply for Medicaid or Medicare.

Furthermore, if an individual has access to primary care, there are discrepancies between what the impoverished patient and provider find important. Steward et. al (2016) conducted a study to examine the differences in priorities in the primary care of persons experiencing homelessness. Among the twenty-six patients and ten providers who participated, both groups agreed that the two most important characteristics of homeless patient care were accessibility and evidence-based decision making. Both groups also rated cooperation, coordination and accountability in the top six. Despite these similarities, there were several notable divergences in ranking between patients and providers. Patients ranked *shared knowledge and the free flow of information about care* to be very important (4th out of 16), while providers rated this very low (14th out of 16). This indicates that information and understanding may play a role in alleviating distress

regarding primary care, and it may convey respect and inform choices. Providers ranked *patients as a source of control* as very important (4th out of 16), while patients ranked this 10th out of 16. Discrepancies such as this can make primary care a difficult experience for this specific population. If someone is able to find primary care, the next question is the intervention effectiveness in impoverished hypertensive adults.

Health interventions can pose a slight challenge with impoverished populations as compared to the general population. Several studies have explored several types of interventions, including diet changes and physical activity within impoverished populations. Gregg and Bedard (2016) examined physical activity experiences as well as perceived benefits and barriers of physical activity in homeless shelters. Results showed a moderate correlation between several of the psychosocial variables and some of the fitness parameters. It also showed a far below acceptable range on the sit and reach test of flexibility. This study demonstrated the need for interventions within homeless populations.

Expanding upon this idea, Kendzor et. al (2016) explored a shelter-based diet and physical activity intervention for the homeless. The intervention group received pedometers with step goals, twice daily fruit/vegetable snacks, and tailored educational newsletters. At baseline, 68.8% of participants were overweight or obese, 93.8% reported food insecurity, and 43.8% reported physical activity levels below the ACSM guidelines. Throughout the four-week intervention, the study group participated in significantly greater daily MVPA (approximately 60min/ day). There was no significant difference between the groups in fruit and vegetable intake; however, the study group reported they felt the intervention was helping for increasing fruit/ vegetable consumption and physical

activity. This study shows that an intervention in itself can help homeless communities feel in better control of their health; however, there was no discussion of the sustainability of the intervention.

In furthering the discussion on hypertension management, the health belief model is effective in explaining health behaviors specific to this condition. The model was developed in the early 1950's by social scientists in the U.S. Public Health Service to understand the failure of people to adopt disease prevention strategies. According to the model, the foundational components of health-related behavior are the desire to avoid illness and get well if already ill, and the belief that a specific health action will prevent or cure illness. The individual's behavior depends on their perception of the benefits and barriers related to the health behavior.

The health belief model is composed of six facets: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cue-to-action, and self-efficacy. Perceived susceptibility is how vulnerable an individual feels towards the illness or disease (LaMorte 2019). For example, if a person with hypertension does not believe that they will be greatly affected by the issue, they are less likely to adhere to any treatment plan to control it. Perceived severity is the individual's feelings about contracting the illness or disease (LaMorte 2019). If an individual does not perceive the consequences of hypertension as severe, they are less likely to adhere to a treatment plan, as opposed to someone who perceives hypertension as severe. Perceived benefits are the perception of the effectiveness of various actions available to reduce the threat of illness or disease (LaMorte 2019). For instance, if an individual perceives dietary changes as effective and can reduce the risk/ severity of hypertension, they are more likely to make

the dietary changes. Perceived barriers are the person's feelings regarding the obstacles to performing a recommended health action (LaMorte 2019). Continuing with the previous example, if an individual perceives diet as an important part of their culture, and the recommended dietary changes do not align with their cultural cuisine, they are less likely to make the dietary changes. A different type of perceived barrier could be if an individual does not have the financial means to afford medication, they are less likely to take it. Cue to action is an either internal or external stimulus needed to trigger the decision-making process to accept a recommended health action (LaMorte 2019). In the case of a hypertensive adult, this could be the doctor's office calling to schedule an appointment. Lastly, self-efficacy is the level of a person's confidence in his or her ability to successfully perform a behavior (LaMorte 2019). For example, if an individual believes they are capable of completing the recommended exercise to manage their hypertension, they are more likely to do it.

Several studies have utilized the health belief model to explain hypertension treatment adherence. Kamran et al. (2015) studied determinants of rural patients' adherence to hypertension medication. Using the health belief model, the respondents who perceived high susceptibility, severity, benefit had better adherence compared to moderate and low susceptibility, severity, and benefit. Likewise, Ross et al. (2004) explored the role of illness perception and treatment beliefs in patient compliance of hypertension management. They found those who perceived medication as beneficial and effective were more likely to be compliant. Self-efficacy also played a significant role in treatment adherence. To further understand how hypertension impacts impoverished individuals, the purpose of this study was to explore the perceptions, knowledge, and

attitudes regarding hypertension, and the treatment adherence barriers among impoverished hypertensive adults. The study was a qualitative analysis, making note of limiting factors to treatment adherence, and exploring the disparities between what health care professionals believe they are teaching and what is being retained/ applied by the hypertensive individuals.

Methods

Participants

Data was collected through semi-structured interviews with hypertensive patients at a free medical clinic. Specifically, the study was conducted at Georgia Volunteer Health Care Program (GVHCP) run clinic in Bulloch County, Georgia. The clinic sees patients who fall 200% below the federal poverty line who have chronic medical conditions that need physician management. Participants had to be current patients of the GVHCP clinic. They had to be at least eighteen years of age and have a current diagnosis of hypertension. Participants were recruited on a volunteer basis- sex, gender, race, job status, or anthropometric data were not limiting factors. To prevent comorbidities from skewing results, participants were limited to those with only an active diagnosis of hypertension. All participants were required to sign an informed consent.

Twenty-one participants were recruited for this project. However, only five participants (n = 5) came to their scheduled appointments and interviews. Participants were given pseudonyms to protect their identity. Grace was a 45-year-old African American who identified as female, Ray was a 53-year-old African American who identified as male, Jolene was a 27-year-old African American who identified as female, Gabe was a 36-year-old Caucasian who identified as male, and Angela is a 41-year-old African American who identified as female. The majority of participants were African American (n = 4) and identified as female (n = 3). One participant was Caucasian, and two participants were male. The mean age of participants was 40.4 years old, with a range of 26 years (27 years old to 53 years old). All participants met the inclusion criteria of being an active patient at the Hearts and Hands clinic, being at least 200% below the Federal

Poverty Line, over the age of eighteen, able to verbally communicate, have an active diagnosis of hypertension, and no known comorbidities.

Procedures

An audio recorded semi structured interview was conducted by the primary researcher. Questions asked included the following:

- What does the word “hypertension” mean to you?
- For you personally, how does it affect your everyday life?
- Can you name any short term or long term effects to your body that uncontrolled hypertension may cause?
- Do you think hypertension is a common disease?
    - If so, do certain races or nationalities get it more than others?
- What treatment plan has your doctor recommended for you?
    - Are you able to follow this treatment daily?
        - If not, what about the plan do you find hard to follow?
    - Do you feel that the treatment plan is helping control your disease?
        - If not, why not?
    - Has your doctor encouraged you to exercise and/ or change what food and drinks you have?
        - If so, how are these lifestyle changes working for you?
    - To sum up, what is your overall attitude about your hypertension diagnosis?

After the interviews were complete, the primary researcher and mentor listened to the recordings, read through transcripts, and determined common themes in answers through thematic analysis, as described in the next section.

Data Analysis

The data was analyzed using thematic analysis developed by Gerald Houlton (1970). The goal of thematic analysis is to process identifying patterns or themes within qualitative data. Unlike many qualitative methodologies, it is not tied to a specific epistemological or theoretical perspective. Thematic analysis identifies themes (patterns in the data that are important or interesting) and uses these themes to address the research. More than just summarizing data, thematic analysis is supposed to interpret and make sense of it (Maguire & Delahunt 2017). Braun & Clarke's (2006) six-phase framework for doing a thematic analysis was utilized.

Step 1: Become familiar with the data. The first step was to become familiar with the data. This included reading and rereading the interview transcripts and beginning to note early impressions. The goal of stage one is to familiarize oneself with the participant responses.

Step 2: Generate initial codes. The goal of step two was to begin to organize the data in a meaningful way and systematic way. This entailed open coding the interviews, and beginning to form rough ideas of codes. This was done by making notes and highlighting in a word processing program, which was done by the primary researcher and the mentor.

Step 3: Search for themes. The next step was to categorize codes into themes. Similar codes were grouped together in a separate document, and then they were assigned

a theme based on the significant or interesting points of the codes. The themes were qualitative in nature, and agreed upon by both the primary researcher and mentor.

Step 4: Review themes. Step four entailed reviewing the themes from step three and continuing to copy and paste any relevant data from the transcripts to the theme. The purpose of this step was to ensure themes made sense, there was no overlap, the data truly supported the theme, and ensured there were no other themes present in the interview transcripts. This process was completed collectively by the primary researcher and the mentor.

Step 5: Define themes. The next step was to refine themes, identify subthemes and the interplay between themes. This was when themes were finalized.

Step 6: Write-up. The final step was to write and discuss the themes found through the interview transcripts and synthesize them in a way that makes sense and note similarities or differences found in the research literature on hypertension and impoverished population.

Results and Discussion

For ease in understanding how the participants' responses could be explained by the theory and supported by previous studies, the results and discussion are presented simultaneously.

The results from this study can be supported and explained by the health belief model, which explains why an individual participates in healthy behavior. This model suggests that a person's belief in the personal threat of an illness or disease, together with a person's belief in the effectiveness of the recommended health behavior, will predict the likelihood the person will adopt the behavior. It is composed of six factors, including perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cue-to-action, and self-efficacy (LaMorte, 2019). When an individual believes their hypertension diagnosis and its potential complications are serious, believe the treatment is effective and believe they can effectively complete it, they are likely to adhere to their treatment *if* the perceived barriers to treatment are minimal. Perceived barriers are specific to the individual; however, impoverished populations might face more perceived barriers than general populations (Moczygemba et al. 2012).

Based on the interview data, participants seemed to have little understanding regarding what hypertension is and means. Grace believed that "it means like high blood pressure like blood pressure is high. It's not really, um, too high but it's high enough. It's like middle range." Several other participants gave similar answers, while a couple other participants could not form an answer. When Gabe was asked what hypertension was, he responded with "uh, I honestly don't know." These responses correlate with the perceived severity component of the health belief model. If participants do not have an

understanding of what hypertension is, they are less likely to understand the severity of it, and therefore less likely to adhere to their treatment. Similar responses were reported by a qualitative study conducted by Moczygemba et al. (2012), who's goal was to explore understanding of hypertension by hypertensive homeless adults. Fourteen participants were asked what hypertension means; common responses were increased blood pressure, physical manifestations, excitability, and emotion. No participants in either study made mention of common key terms related to the definition of hypertension, such as systolic blood pressure, diastolic blood pressure, or arterial pressure.

Bilal et al. (2015) conducted a study to determine basic understanding of hypertension among hypertensive adults. Similar to the current study, the majority of participants did not know the definition of hypertension, and what systolic or diastolic readings were. Since having a basic knowledge of hypertension is correlated with higher levels of treatment adherence and a better attitude regarding one's diagnosis (Buang et al. 2019), these responses pose a concern: if impoverished hypertensive adults have little understanding of their diagnosis, they may not be likely to maintain treatment adherence.

Most participants were able to describe the physical manifestations of hypertension that affect their everyday life. Ray described his physical symptoms as "Um, if I don't take my medicine I have headaches, heart rate speeds up, um sometimes I be tired, and that's about it." Grace also reported headaches, as well as dizziness, and issues with smell. Lightheadedness was a common theme, as it was also reported by Grace and Gabe. In addition, Gabe reported tiredness and apathy. Jolene was unable to list any physical symptoms, as she stated "Uh, I'm not sure because I don't really, I don't know what it's supposed to do." Angela reported no physical manifestations, which she

attributed to healthy diet and exercise. She stated, “It doesn’t affect me because I try to eat right even before I found out that I had high blood pressure, then I go to the gym like three times a week.” These results are similar to those in several other studies. Participants in Moczygemba’s et al. (2012) study expressed similar physical manifestations of hypertension among impoverished adults, with headaches and dizziness being a common response among participants. Likewise, general population hypertensive adults seem to experience similar physical manifestation, as can be seen in a study conducted by Bengtsson et al. (2014). Participants in this study reported dizziness, stress, and headaches as symptoms of hypertension they experience.

When participants were asked to discuss both short- and long-term effects of unmanaged hypertension, predominantly physical manifestations were discussed. Each participant described a different short-term effect or could not list one. Jolene stated, “I'm not sure all I know is that I can't sleep at night and I get hot easily and that about, that’s it. I’m not sure.” Ray described how he “Uh, sweats. Um, could fall out.” Likewise, when asked to discuss long term effects of hypertension, physical symptoms were discussed with no reference to physiological effects and/ or changes. Ray, Gabe, and Jolene did not mention any long-term effects of hypertension. This reflects a potential lack of perceived severity of hypertension in relation to the health belief model. Without understanding of the magnitude of long term and short-term consequences of hypertension, participants are less likely to adhere to their treatment regimen. Both Angela and Grace mentioned heart attack. Angela stated, “I know it can definitely cause a heart attack cause my mom had one.” Grace described the long-term effects as “Strokes. Heart attacks. Death.” Similarly, in the study conducted by Bilal et al. (2015), the majority of participants did not know the

physiological effects of hypertension, such as narrowed blood vessels in the eyes and kidneys, aneurysm, metabolic syndrome, and trouble with memories. In their study, fifty-six percent of participants were able to identify heart attack as a complication of hypertension. In this study, the number of participants who identified heart attack is lower, at 40%. It is important to note the Bilal et. al did not limit their study to impoverished hypertensive patients; rather, their sample was hypertensive adults, regardless of socioeconomic status. Regardless, it appears that based on these studies, there seems to be a lack of understanding of the numerous physiological effects of hypertension among hypertensive adults. Knowledge of these effects is correlated to higher treatment adherence, and in turn, lower complications (Jankowska-Polankska et al. 2016). However, treatment adherence within impoverished populations might be affected by more than just lack of hypertension knowledge; treatment plan understanding, socioeconomic factors, and cultural factors must also be considered.

When treating hypertension, a provider usually starts by recommending lifestyle changes, such as weight loss, reduced sodium intake, physical activity, limiting alcohol consumption, and incorporating the Dietary Approaches to Stop Hypertension (DASH) eating plan. If this is not effective in lowering an individual's blood pressure to a normal reading (less than 120/80), pharmacotherapy is the next step. Prescription medication is intended to be used with lifestyle modifications (Nguyen et al., 2010). This approach was not reflected in responses from participants when they were asked to discuss the treatment plan recommended by their primary care physician. Four of the five participants listed medication, three of which listed only medication as the treatment plan. When Jolene was asked her treatment plan, she responded with "None, I don't know. I

just got pills from the hospital." This is quite concerning as pharmacotherapy is meant to be used in combination with lifestyle modification, and lifestyle modification is to precede pharmacotherapy. Grace and Ray only mentioned lifestyle modifications. Grace states that her physician recommended she do "low sodium, diet, what to eat, and um exercise, watch the weight, and stuff like that." Likewise, Ray mentioned "Um medication, to slow down my alcohol intake, my smoking. Um, that's about it." Grace and Angela were the only participants to discuss the importance of exercise in hypertension management. Exercise and dietary changes are two of the most beneficial lifestyle changes an adult can make to lower high blood pressure. It seems there is a lack of understanding of these lifestyle modifications among participants.

When analyzing treatment adherence barriers, two predominant themes emerged: medication and diet. Using the health belief model, medication and diet are considered perceived barriers. In order to overcome these barriers and engage in hypertension treatment adherence, the individual must feel as if they have the resources and self determination to overcome these barriers. Furthermore, they must believe the benefit of treatment adherence is greater than the barriers. Ray, Jolene, and Angela all discuss barriers associated with medication. However, each one experienced a different barrier. Ray states "He prescribed me some medication to take one time but since I don't have no insurance, I'm not able to go to him." Kinchen and Wright (1991) also found cost to be a barrier for impoverished hypertensive adults. They surveyed hypertensive adults at a healthcare for the homeless (HCH) clinic. Several participants noted lack of insurance makes it near impossible to afford certain medications. Someone facing severe impoverishment is likely to use their financial resources to meet basic needs (food, water,

shelter, clothing) before purchasing medication, especially if they have little understanding of the importance of the medication and complications associated with hypertension.

According to the model, not having the financial resources to afford both medication and necessities of living, medication might not be perceived as important. Jolene's barrier was not with the cost of the medication, but rather the act of taking the medication. "I mostly just smash it and put it in the food that I am eating. I don't really take pills."Angela's difficulty with medication has been reported frequently by patients in other studies. She states, "From the beginning of it it's hard to get used to having to take medicine every day." A meta-analysis conducted by Khatib et al. (2014) produced similar results. In their study, they report that the number one reason hypertensive patients give for lack of treatment adherence is forgetting to take their medication daily. Again, this draws back to the issue of lack of understanding of hypertension and its long term/ short term effects. If an individual has a better understanding of hypertension, they are more likely to adhere to their treatment (Buang et al. 2019).

The second theme was dietary concerns. Grace emphasized her difficulty with making the recommended dietary changes. When she was asked if her physician has recommended any dietary or physical activity changes, she stated "Uh, yeah doctor request… told me what I need to do. Its hard cause if you're so used to something… I love my Mountain Dews [laughs]. I can't take medicine with water cause it makes me sick so I take it with Mountain Dew and juice. And then I love my um sodium and fatty foods so uh… pork I eat that and I gotta put salt on everything I eat, so yeah." When asked what is the hardest part of the treatment to follow, she continues this idea by

adding “The eating. [laughs]. The eating ‘cause I love seafood. I love spicy food. So, I love like salt, for my food to be seasoned and I can’t do no without season, I tried that no sodium, mmmhmm. I hate it.” Gabe had similar complaints regarding dietary recommendations from his physician. When asked if his physician has recommended any dietary or physical activity changes, he responded “Yes, he told me not to eat pork and that's kinda hard to do.”

Based on the health belief model, Grace and Gabe identify the cost of giving up food they like as a perceived barrier in hypertension treatment adherence. Other research has reported similar findings among hypertensive adults. In 2014, Long et. al conducted a study to examine the knowledge, attitudes, and beliefs related to hypertension and hyperlipidemia self-management among African American men. Similar to the current study, they found dietary changes to be a difficult factor for many of the participants. It seems as though many participants have not been well educated on enjoyable alternatives to certain foods and seasonings. Grace’s response is an excellent example of this. She has not been educated on alternatives to sodium for seasoning, and she states she hates food without seasoning. It is hard for someone to adhere to something they hate. It seems as if patients could benefit from increased education on alternatives to sodium, certain spices, and red meat.

Within the data, there was mixed understanding of racial differences in hypertension. All participants were able to correctly identify hypertension as a common disease. However, there were mixed results regarding whether certain races are more prone to develop hypertension. Grace stated “It's a common disease, and it doesn't matter the race and nationality. Anybody can get it.” Jolene was unsure if there are racial

differences. Angela and Ray identified African Americans as more susceptible to hypertension. Ray stated “I think some races get it more than others, particularly black. Um, I guess it cause of what we eat mostly.” The understanding of commonality and racial differences in hypertension relates to the perceived susceptibility of hypertension. All participants seemed to understand susceptibility to hypertension based on commonality. However, not all participants understood susceptibility in relation to race. While there is no current literature reflecting similar understanding of racial differences in hypertension, Ray makes an interesting point that several studies have looked into: soul food and hypertension.

Like Ray, Angela also attributed higher rates of hypertension among African Americans to dietary choices specific to their culture. She states, “Yes, it is very common in African Americans because of the choices of eating, the soul food eating. I know a lot of people that suffer from it and people that have passed away due to it so it does affect African Americans more.” Long et al. (2014) also found the cultural aspect of food to cause difficulties in treatment adherence among African Americans. These results are supported by a study conducted by Rankins et. al (2007) on soul food and hypertension. Many soul foods are high fat, high sodium, and high calories. They conducted an experiment to determine the effectiveness and enjoyability of making slight variations in the soul food recipes in order to reduce fat, saturated fat, sodium content, and calories in adherence to the DASH diet. They found that slight modifications in recipes made the food healthier and maintained the flavor of the cuisine, without the excess fat, sodium, and calories. The cultural importance of soul food cannot be overlooked or overridden when encouraging a hypertensive adult to make dietary changes. However, simple recipe

modifications in adherence to the DASH diet might be beneficial in maintaining treatment adherence for those with strong cultural connections to food.

When asked to discuss treatment efficacy, most participants agreed it is beneficial if you do it; however, that is where barriers come into play. Grace summarized this idea well by stating “It helps if you do it. But if you don’t, it's on you. If you listen to what the doctor said and actually follow the plan, it will help lower your high blood pressure.” Perceived treatment-efficacy and self-efficacy are two components of the health belief model that relate well to the responses made by participants concerning treatment efficacy. If the individual feels competent in their ability to complete the treatment, and believes treatment is effective, they are likely to adhere to their treatment plan. This idea is supported by research conducted by Ross et al. (2004). Using questionnaires to study patient compliance in hypertension along with their treatment beliefs, the researchers concluded that treatment compliance is associated with a number of health beliefs such as specific-necessity, personal control and emotional response. Grace emphasizes the personal control factor of treatment compliance. If an individual takes control of their health and does what is required of them, they are more likely to adhere to the regimen and in turn, the treatment will be found effective.

The overall feelings regarding their hypertension diagnosis were mixed among participants. Grace expressed concern by stating “It should be better. I mean I am concerned ‘cause it runs in the family, diabetes, high blood pressure, stuff like that. So I’m concerned, but I’m just hard headed [laughs].” Jolene did not express concern, largely because she was unsure of the effects of hypertension. She stated “I am not sure because I don’t know what is wrong, I can’t tell. I don’t understand what my blood

pressure do." Ray indicated regret by stating "I wish I would've done better, um in my youth age to take care of myself better than what I have because I'm sixty-two now and uh this is the effect of age." Angela had a different stance, explaining how she feels in control of her hypertension. She explained, "I don't have a problem with it. I'm not worried about it or upset about it. So, I, it don't really bother me. I just take my medicine and go on with my everyday life." Concern seemed to be a larger theme in a study conducted by Buang et al. (2019). They gave a questionnaire to hypertensive adults in Malaysia to determine knowledge and attitudes regarding hypertension diagnosis. 95.5% of their participants reported concern regarding hypertension diagnosis. However, their participants also had a good understanding of hypertension, which could be why they showed higher levels of concern.

In whole, the health belief model explains the results in a way that aligns with current research literature. Participants who show lack of knowledge of hypertension and its long- and short-term complications are likely to have a lower level of perceived severity. The less one perceives the severity of hypertension, the less likely they are to adhere to their treatment regimen. Participants who felt the barriers of treatment adherence (such as dietary changes and medication adherence) outweighed the benefits were less likely to adhere to their treatment. In addition, participants who felt confidence in their ability to manage their hypertension diagnosis were more likely to adhere to their treatment.

Conclusion

There were several limitations to this study. First, only five participants attended their scheduled interview appointments, which makes it difficult to generalize the results

to a larger population. In relation to this, the interviews had to be conducted in a private setting for confidentiality, and a quiet setting to get an audio recording of the interview. This required participants to travel to the GVHCP clinic, which could potentially have been problematic for some participants. Next, not every participant might have felt comfortable sharing information such as their accessibility to resources and understanding of hypertension. While they were asked to be completely honest in their answers, attention, honesty, or thoroughness of the participant could not be controlled, meaning that interviews could be shorter in length and not as in depth as desired. Likewise, the mood of the participants could have led to short and overly broad responses, especially if they were shy or uncomfortable. Lastly, all participants came from the same GVHCP clinic in Bulloch County, Georgia, which limits generalizability.

This research aimed to explore the perceptions, knowledge, and attitudes regarding hypertension, as well as treatment adherence barriers among impoverished hypertensive adults. Based on thematic analysis of the interview transcripts, it was concluded there was little knowledge regarding hypertension among patients. Patients identified medication and dietary changes- specifically in relation to cultural cuisine- as the biggest treatment adherence barriers. Overall attitudes regarding hypertension diagnosis ranged from confusion to regret to confidence in one's ability to manage their hypertension. The health belief model was used to explain why a patient adhered/ did not adhere to their treatment regimen.

Based on the results from this study, it appears increased communication and education from providers regarding the patient's hypertension diagnosis could be useful. In future studies, it would be interesting to explore this research question with a larger

sample size in order to make it more generalizable to the impoverished population as a whole.

Review of Literature

Hypertension

Hypertension is a global public health crisis. It is the largest risk factor for cardiovascular disease, which is the leading cause of death. In the United States, approximately 47% of people have an active diagnosis of hypertension. Hypertension affects over one billion people worldwide, and this is expected to continually increase (CDC, 2021). The two components of hypertension treatment are lifestyle modifications and pharmacotherapy. Lifestyle modifications include smoking and alcohol cessation, dietary changes, and increased physical activity. Lifestyle modifications are the first line of treatment; however, if an individual's blood pressure has not lowered to a normal value, pharmacotherapy will likely be pursued with continuation of lifestyle modifications (Nguyen et al., 2010). However, treatment is not always this simple. There are multiple factors that can confound hypertension management. This literature review will discuss the multiple factors that influence hypertension management, and then further discuss barriers experienced by impoverished individuals. Lastly, I will discuss the Health Belief Model in relationship to hypertension management and treatment adherence.

Hypertension Management in General Population

There is abundant research on barriers to hypertension management in the general population. A meta-analysis conducted by Khatib et al. (2014) looked at qualitative and quantitative barriers to hypertension management from both provider and patient perspective. Providers reported qualitative barriers as lack of knowledge, skills, motivation, social influence, difficulty breaking habits, availability, accessibility, and

affordability. Patients also reported lack of knowledge, skills, motivation, difficulty breaking habits, availability, accessibility, and affordability as barriers. However, they also mentioned stress and anxiety, memory, belief about capability, and medication itself as barriers. Long et al. (2017) found similar qualitative barriers among hypertensive and hyperlipidemic African American men. They reported medication, unhealthy diet, and perceived lack of control as barriers to hypertension and hyperlipidemia management.

Knowledge and Hypertension Management

Before assessing the relationship between hypertension knowledge and treatment adherence, basic understanding of hypertension among patients must be addressed. Bilal et al. (2016) researched hypertension knowledge, awareness, and self care practices among hypertensive adults. They concluded there was inadequate basic knowledge of hypertension among cardiac hypertensive patients. They reported that 81.8% did not know that hypertension is defined as high blood pressure, 97.1% did not know that top measurement of blood pressure was referred to as systolic, and only 25.0% correctly identified normal systolic blood pressure to be less than 140mmHg. A lack of understanding of hypertension was also reported by Sanne et al. (2008). They evaluated hypertension knowledge among hypertensive patients at an urban clinic by conducting a ten question survey. They reported that 58.1% of respondents did not know that hypertension does not cause cancer, 40.2% did not know that a blood pressure reading of 130/80 mmHg is considered normal, 39.5% did not know hypertension lasts a lifetime, and 23.6% did not correctly identify renal failure as a complication of hypertension.

Several studies have further explored the relationship between knowledge of hypertension management and treatment adherence. Jankowska-Polańska et al. (2016)

investigated the relationship between knowledge of hypertension and its management, and adherence to pharmaceutical treatment. They concluded that patient knowledge of hypertension management is a significant independent determinant of treatment adherence. They also noted that non-pharmaceutical treatment (such as lifestyle modification) is also associated with higher levels of treatment adherence. This is not the only study supporting these findings. Buang et al. (2019) examined knowledge, attitudes, and practices regarding hypertension among hypertensive adults in rural Malaysia. They found a significant positive correlation between knowledge of hypertension and attitude regarding diagnosis, a significant positive correlation between knowledge of hypertension and practices of lifestyle modifications, and a significant fair correlation between attitude and practice.

Moczygemba et al. (2012) examined knowledge of hypertension among homeless hypertensive adults. When asked to describe what hypertension means, the majority of participants associated it with increased blood pressure, but other associations included physical symptoms (headaches, sweating, etc.), and hyperactivity. Several answers were given when asked what can happen as a result of uncontrolled blood pressure. Less than half of the participants noted the long-term health complications of uncontrolled blood pressure. Other answers included emotional strain and acute physical symptoms. A limited understanding of hypertension, blood pressure goals and lifestyle modification recommendations was a common theme. The most reported barrier to lifestyle modification recommendations is the transient lifestyle of being homeless.

Cultural Implications in Hypertension Management

Culture plays an important role in the everyday life of many individuals, including their food choices. Several studies have been conducted to explore the relationship between culture and hypertension. Horowitz et al. (2004) examined the importance of cultural sensitivity in relation to hypertension management. Participants reported physician-recommended dietary changes difficult to follow for several reasons. First, recommended dietary changes are not always feasible or cohesive with family life and social situations in the context of culture. In addition, the recommended dietary changes were reported by participants as an unwanted deviation from traditional and preferred culture diets. With the importance of food as a social context within culture, moving away from traditional cultural diet can feel socially isolating. These concepts were also emphasized by participants in a study conducted by Long et al. (2016). This study looked at the knowledge, attitudes, and beliefs regarding hypertension and hyperlipidemia among African Americans. Participants discussed cultural implications in diet as a barrier to treatment management. Specifically, they noted the influence of African American culture in passing down genes, habits, feelings regarding illness and disease, and food traditions.

Based on these studies, it is apparent that cultural influences in dietary choices must be considered when discussing dietary changes with regards to hypertension management. In some cases, even small modifications to diet while still maintaining cultural ties is possible. For example, Rankins et al. (2017) explored this with African American soul food and diet, determining whether such changes could increase adherence to the DASH diet, and still respect the cultural importance of food. They found

that slight modifications in the traditional, soul food recipes decreased excess fat, cholesterol and caloric content. In addition, participants reported enjoyment of the modified food, and felt it maintained its cultural influence and importance.

Impoverishment and Health

On any given day, there are approximately 630,000 American who are facing homelessness (Sckell et al. 2016) with countless more experiencing severe poverty. The Supported Accommodation Assistance Act (1994) states a person is considered homeless if he or she has inadequate access to safe and secure housing. Defining poverty poses a slight challenge, but the Census Bureau defines it as a family income that is less than the income threshold for the family size and composition. Since 1990, the homeless population has been aging, with about half of the homeless population to be over 50 years old. Prior to 1990, almost 90% of the homeless population was younger than 50 years old.

There is abundant data showing that aging is associated with an increase in chronic health issues and premature mortality (Henwood et al., 2017). However, the homeless and impoverished populations face specific health vulnerabilities (Groton et al., 2020). A study conducted by Henwood et. al (2017) surveyed 421 participants from Los Angeles entering Permanent Supportive Housing (PSH) from homelessness. The most reported chronic physical health condition was hypertension (52%), followed by chronic respiratory disease (29%), diabetes (24%), cancer (11%), and heart failure (8%). In comparison, Asgary et. al (2016) reported rates of several chronic conditions among homeless adults in New York City shelter-based clinics, with hypertension being reported most often, (40.1%). Compared to the general population, this percentage was much

higher. Likewise, the homeless population with stage 2 hypertension was 15.8% and the general population was a mere 0.03%. However, this is not a new phenomenon. A study conducted in 1991 by Kinchen and Wright found that with the exception of alcohol abuse, hypertension was the most common health problem in the homeless population, affecting approximately 14% to 25% of this population.

Hypertension Management in Impoverished Populations

Based on current literature, it is apparent that hypertension rates tend to be higher among homeless and impoverished populations. However, this population is prone to barriers to treatment that the general population might not have to face. Asgary et. al (2016) identified several factors likely to complicate chronic disease management in impoverished populations. These include lack of access to primary care (cost, transportation), mental illness and substance abuse, discrimination in the healthcare system, and barriers to therapeutic lifestyle choices. Although assistance programs are available, Medicare and Medicaid do not automatically eliminate this barrier to accessibility. While someone might be eligible, they might not have the means to apply for Medicaid or Medicare.

Furthermore, if an individual has access to primary care, there are discrepancies between what the impoverished patient and provider find important. Steward et. al (2016) conducted a study to examine the differences in priorities in the primary care of persons experiencing homelessness. A multidisciplinary research team reviewed concepts from an Institutes of Medicine report, and crafted language to express sixteen constructs in relation to primary care that can facilitate self-administration by both patients and providers. Participants were instructed to bind the cards in order of priority based on how

they feel primary care should be. Among the twenty-six patients and ten providers who participated, both groups agreed that the two most important characteristics of homeless patient care were accessibility and evidence-based decision making. Both groups also rated cooperation, coordination and accountability in the top six. Despite these similarities, there were several notable divergences in ranking between patients and providers. Patients ranked *shared knowledge and the free flow of information about care* to be very important (4th out of 16), while providers rated this very low (14th out of 16). This indicates that Information and understanding may play a role in alleviating distress regarding primary care, and it may convey respect and inform choices. Providers ranked *patients as a source of control* as very important (4th out of 16), while patients ranked this 10th out of 16. Discrepancies such as this can make primary care a difficult experience for this specific population. If someone is able to find primary care, the next question is the intervention effectiveness in impoverished hypertensive adults.

Health Interventions with Impoverished Adults

Health interventions can pose a slight challenge with impoverished populations as compared to the general population. Several studies have explored several types of interventions, including diet changes and physical activity within impoverished populations. Gregg and Bedard (2016) examined physical activity experiences as well as perceived benefits and barriers of physical activity in homeless shelters. The study included several different measures. First was a self-report questionnaire to assess psychosocial factors, including global self-esteem, general self-efficacy, exercise intention and attitudes, and quality of life. Next, fitness tests were completed to determine participant body mass index, cardiorespiratory fitness, flexibility and general body

strength. Lastly, interviews were completed to analyze participant's social support, motivations, perceived benefits, and preferences related to physical activity. Results showed a moderate correlation between several of the psychosocial variables and some of the fitness parameters. It also showed a far below acceptable range on the sit and reach test of flexibility. This study demonstrated the need for interventions within homeless populations.

Expanding upon this idea, Kendzor et. al (2016) explored a shelter-based diet and physical activity intervention for the homeless. Thirty-two shelter residents were randomly assigned to a four-week diet and physical activity intervention (n = 17) to an assessment-only control group (n = 15). The intervention group received pedometers with step goals, twice daily fruit/vegetable snacks, and tailored educational newsletters. At baseline, 68.8% of participants were overweight or obese, 93.8% reported food insecurtiy, and 43.8% reported physical activity levels below the ACSM guidelines. Throughout the four-week intervention, the study group participated in significantly greater daily MVPA (approximately 60min/ day). There was no significant difference between the groups in fruit and vegetable intake; however, the study group reported they felt the intervention was helping for increasing fruit/ vegetable consumption and physical activity. This study shows that an intervention in itself can help homeless communities feel in better control of their health; however, there was no discussion of the sustainability of the intervention.

Health Belief Model and Hypertension

The health belief model is effective in explaining health behaviors in hypertension management. The model was developed in the early 1950's by social scientists in the

U.S. Public Health Service to understand the failure of people to adopt disease prevention strategies. According to the model, the foundational components of health related behavior are the desire to avoid illness and get well if already ill, and the belief that a specific health action will prevent or cure illness. The individual's behavior depends on their perception of the benefits and barriers related to the health behavior. The health belief model is composed of six facets: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cue-to-action, and self-efficacy. Perceived susceptibility is how vulnerable an individual feels towards the illness or disease (LaMorte 2019). For example, if a person with hypertension does not believe that they will be greatly affected by the issue, they are less likely to adhere to any treatment plan to control it. Perceived severity is the individual's feelings about contracting the illness or disease (LaMorte 2019). If an individual does not perceive the consequences of hypertension as severe, they are less likely to adhere to a treatment plan, as opposed to someone who perceives hypertension as severe. Perceived benefits are the perception of the effectiveness of various actions available to reduce the threat of illness or disease (LaMorte 2019). For instance, if an individual perceives dietary changes as effective and can reduce the risk/ severity of hypertension, they are more likely to make the dietary changes. Perceived barriers are the person's feelings regarding the obstacles to performing a recommended health action (LaMorte 2019). Continuing with the previous example, if an individual perceives diet as an important part of their culture, and the recommended dietary changes do not align with their cultural cuisine, they are less likely to make the dietary changes. A different type of perceived barrier could be if an individual does not have the financial means to afford medication, they are less likely to

take it. Cue to action is an either internal or external stimulus needed to trigger the decision-making process to accept a recommended health action (LaMorte 2019). In the case of a hypertensive adult, this could be the doctor's office calling to schedule an appointment. Lastly, self-efficacy is the level of a person's confidence in his or her ability to successfully perform a behavior (LaMorte 2019). For example, if an individual believes they are capable of completing the recommended exercise to manage their hypertension, they are more likely to do it.

Several studies have utilized the health belief model to explain hypertension treatment adherence. Kamran et al. (2015) studied determinants of rural patients' adherence to hypertension medication. Using the health belief model, the respondents who perceived high susceptibility, severity, benefit had better adherence compared to moderate and low susceptibility, severity, and benefit. Likewise, Ross et al. (2004) explored the role of illness perception and treatment beliefs in patient compliance of hypertension management. They found those who perceived medication as beneficial and effective were more likely to be compliant. Self-efficacy also played a significant role in treatment adherence.

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Appendix A

Purpose: The main purpose of the proposed study is to examine the perceptions of hypertension and treatment adherence of impoverished hypertensive adults from a qualitative perspective.

Research Question: What is the understanding of hypertension and treatment adherence among impoverished hypertensive adults?

Limitations:

There are a number of potential limitations with this study that need to be addressed.

1. Small sample size; only five participants came to their scheduled interview appointments, which makes it difficult to generalize the data to a larger population.
2. Consent; not every potential participant might feel comfortable sharing information such as their accessibility to resources, their understanding of TLC's and Hypertension, etc.
3. Location; Due to the fact that interviews must be conducted in a private setting for confidentiality and a quiet setting to get an audio recording of the interview, this will require participants to travel to the GVHCP clinic, which could potentially be seen as problematic for some participants.
4. The researcher cannot control the attention, honesty, or thoroughness of the participant, meaning that interviews could be shorter in length and not as in depth as desired.
5. Mood of participant; if the participant is shy and unwilling to talk during the interview, it could lead to short and overly broad responses to questions.

6. Convenience sampling; all participants are coming from the same GVHCP clinic in Bulloch County, Georgia

Delimitations:

1. Participants will be limited to those who are high-functioning and are able to verbally communicate effectively.
2. Participants will be limited to one kind of health condition (hypertension) in order to maintain consistency
3. Participants must be at least eighteen years of age.

Assumptions:

1. All participants will answer questions honestly and to the best of their ability.
2. The responses given will be detailed and open, allowing for limited amounts of probing/follow-up questions.

Appendix B: Interview Transcripts

Participant One Interview: Grace

08/16/21

04:01

Interviewer: If you are ready and comfortable I will now ask you nine questions. There are no right or wrong answers, just answer the best you can. Hypertension is the medical term for high blood pressure and is the term we will be using during this interview.

Interviewer: How old are you?

Participant one: Forty-five .

Interviewer: And what would you consider your race?

Participant one: African American.

Interviewer: And are you Hispanic at all?

Participant one: No.

Interviewer: What is your biological and/ or preferred gender?

Participant one: Female.

Interviewer: What does the word hypertension mean to you?

Participant one: To me, it means like high blood pressure like blood pressure is high. It's not really, um, too high but it's high enough. It's like middle range.

Interviewer: For you personally how does it affect your everyday life, or does it?

Participant one: It does sometimes. They have headaches, and like smell. Like when your blood pressure get real high get dizzy, lightheaded.

Interviewer: Can you name any short or long term effects to your body that uncontrolled hypertension might cause?

Participant one: Strokes. Heart attacks. Death.

Interviewer: Do you think hypertension is a common disease? If so do some races and nationalities get it more than others?

Participant one: Its a common disease, and it doesn't matter the race and nationality. Anybody can get it.

Interviewer: What treatment plan has your doctor recommended for you?

Participant one: Low sodium, diet, what to eat, and um exercise, watch the weight, and stuff like that.

Interviewer: Are you able to follow this treatment daily and if not, what is it about this plan do you find hard to follow?

Participant one: The eating. [laughs]. The eating cause I love seafood. I love spicy food. So I love like salt, for my food to be seasoned and I can't do no without season, I tried that no sodium, mmmhmm. I hate it.

Interviewer: Do you feel like the treatment plan is helping control your disease? If not why not?

Participant one: It helps if you do it. But if you don't, its on you. If you listen to what the doctor said and actually follow the plan, it will help lower your high blood pressure.

Interviewer: Has your doctor encouraged you to exercise and/or change what foods and drinks you consume? If so, how are the lifestyle changes working for you?

Participant one: Uh, yeah doctor request… told me what I need to do. Its hard cause if youre so used to something… I love my Mountain Dews [laughs]. I can't take medicine with water cause it makes me sick so I take it with Mountain Dew and juice. And then I

love my um sodium and fatty foods so uh… pork I eat that and I gotta put salt on everything I eat, so yeah.

Interviewer: : To sum up, what do you think is your overall attitude about your hypertension diagnosis?

Participant one: It should be better. I mean I am concerned cause it runs in the family, diabetes, high blood pressure, stuff like that. So I'm concerned but, I'm just hard headed [laughs].

Participant Two Interview: Ray

09/13/2021

04:55

Interviewer: If you are ready and comfortable I will now ask you nine questions. There are no right or wrong answers, just answer the best you can. Hypertension is the medical term for high blood pressure and is the term we will be using during this interview.

Interviewer: How old are you?

Participant two: Fifty-two

Interviewer: What would you consider your race?

Participant two: African American.

Interviewer: Are you Hispanic?

Participant two: No.

Interviewer: What is your biological and/ or preferred gender?

Participant two: Male

Interviewer: What does the word hypertension mean to you?

Participant two: Blood pressure?

Interviewer: Yes

Participant two: Hyper, restless

Interviewer: For you personally, how does having hypertension or high blood pressure affect your everyday life, if it does?

Participant two: Um, if I don't take my medicine I have headaches, heart rate speeds up, um sometimes I be tired, and thats about it.

Interviewer: Can you name any short or long term effects to your body that uncontrolled hypertension might cause?

Participant two: Uh, sweats. Um, could fall out. I try to stay out of the salt and thats about it.

Interviewer: OK do you think hypertension is a common disease if so to some races or nationalities get it more than others?

Participant two: I think some races get it more than others, particularly black. Um, I guess it cause of what we eat mostly.

Interviewer: Do you think its a common disease?

Participant two: Yes.

Interviewer: What treatment plan is your doctor recommended for you if any?

Participant two: Um medication, to slow down my alcohol intake, my smoking. Um, thats about it.

Interviewer: Are you able to follow this treatment daily, and if not what about the plan do you find hard to follow?

Participant two:I get bored, I tend to find me something to do. I'm hyperactive, and its hard for me to try to relax. And I will result to other things to try to calm me down, cause

when I get real active I get real nervous and I drink something, alcohol or something. Something to try to calm me down. I take some type of medication which I dont have anymore. He prescribed me some medication to take one time but since I dont have no insurance I'm not able to go to him.

Interviewer: Do you feel that the treatment plan is helping control your disease? If not why not?

Participant two: I believe so its helping me control my disease.

Interviewer: Has your doctor encouraged you to exercise or change what food and drinks you have? If so are these lifestyle changes working for you?

Participant two: Um, he told me I can exercise some but with the condition of my body its hard. Like with me sitting in this chair it is really hurting me so bad. I cant hardly sit down too long and I cant stand too long. Thats why I am very active.

Interviewer: To sum up, what do you think is your overall attitude about your hypertension diagnosis?

Participant two: I wish I would've done better, um in my youth age to take care of myself better than what I have because I'm sixty-two now and uh this is the effect of age.

Participant 3 Interview: Jolene

10/04/2021

03:51

Interviewer: If you are ready and comfortable I will now ask you nine questions. There are no right or wrong answers, just answer the best you can. Hypertension is the medical term for high blood pressure and is the term we will be using during this interview.

Interview: How old are you?

Participant 3: Twenty-seven.

Interviewer: What is your race?

Participant 3: African American

Interviewer: What is your biological and/ or preferred gender?

Participant 3: Female

Interviewer: Question number one what does the word hypertension mean to you?

Participant 3: Uhh, probably just like what you said, its the term used for high blood pressure.

Interviewer: For you personally how does it affect your every day life? So how does having high blood pressure affect your everyday life, if it does?

Participant 3: Uh, I'm not sure because I don't really, I don't know what its supposed to do.

Interviewer: Can you name any short term or long term affects to your body that uncontrolled high blood pressure might cause?

Participant 3: I'm not sure all I know is that I can't sleep at night and I get hot easily and that about, thats that. I'm not sure.

Interviewer: Do you think hypertension is a common disease if so do some races or nationalities get it more than others?

Participant 3: Um, maybe? Maybe.

Interviewer: What treatment plant has your doctor recommended for you?

Participant 3: None, I don't know. I just got pills from the hospital.

Interviewer: Did they tell you to exercise, change your diet, or anything like that?

Participant 3: No?

Interviewer: Are you able to follow this treatment daily and if not what about that plan is hard to follow? So are you able to take your medicine daily?

Participant 3: I mostly just smash it and put it in the food that I am eating. I don't really take pills.

Interviewer: Do you feel that the treatment plan is helping control your disease? If not, why?

Participant 3: I am not sure because I don't know what I take.

Interviewer: Has your doctor encouraged you to exercise or change what foods and drinks you have ? If so, are the lifestyle changes working for you?

Participant 3: I drink a lot of water. I don't see a difference.

Interviewer: To sum up, what do you think is your overall attitude about your hypertension diagnosis?

Participant 3: I am not sure because I don't know what is wrong, I can't tell. I don't understand what my blood pressure do.

Participant 4 Interview: Gabe

10/11/21

02:12

Interviewer: How old are you?

Participant 4: Thirty-six.

Interviewer: What is your race?

Participant 4: White

Interviewer: What is your biological and/ or preferred gender:

Participant 4: Male

Interviewer: If you are ready and comfortable we will now ask you nine questions. There are no right or wrong answers, just answer the best you can. Hypertension is the medical term for high blood pressure and the term we will be using during this interview.

Interviewer: Question number one. What does the word hypertension mean to you?

Participant 4: Uh, I honestly don't know.

Interviewer: For you personally, how does having high blood pressure affect your everyday life?

Participant 4: Makes you light headed kinda, and makes you just feel drowsy and not wanna do nothing.

Interviewer: Alright next question. Can you name any long term or short term to your body that uncontrolled hypertension might cause?

Participant 4: Lightheadedness and dizziness.

Interviewer: Do you think Hypertension is a common disease? If so, do some races or nationalities get it more than others?

Participant 4: No, its all the same

Interviewer: Do you think it is common?

Participant 4: Yeah.

Interviewer: What treatment plan has your doctor recommended for you to maintain your blood pressure?

Participant 4: Blood pressure pills.

Interviewer: Are you able to follow this treatment daily? If not, what about it is hard to follow?

Participant 4: I'm able to follow it. From the beginning of it its hard to get use to having to take medicine everyday.

Interviewer: Do you feel your treatment plan, so your medication, is helping control your disease? If not, why not?

Participant 4: Yes, it is.

Interviewer: Has your doctor encouraged you to exercise and/ or change what foods and drinks you have? If so, how are these lifestyle changes working for you?

Participant 4: Yes, he told me not to eat pork and thats kinda hard to do.

Interviewer: To sum up, what do you think is your overall attitude towards your hypertension diagnosis.

Participant 4: Pretty good as of now.

Participant 5 Interview: Angela

10/18/21

03:42

Interviewer: If you are ready and comfortable we will now ask you nine questions. There are no right or wrong answers, just answer the best you can. Hypertension is the medical term for high blood pressure and the term we will be using during this interview.

Interviewer: First, how old are you?

Participant 5: Forty-one

Interviewer: Do identify as male, female, or other?

Participant 5: Female.

Interviewer: What is your race?

Participant 5: African American

Interviewer: What does the word Hypertension mean to you?

Participant 5: High. Like just high.

Interviewer: For you personally, how does having high blood pressure affect your everyday life?

Participant 5: It doesn't effect me because I try to eat right even before I found out that I had high blood pressure, then I go to the gym like three times a week. So I guess you just inheri it from my mom and my dad, it kinda runs in my family.

Interviewer: Can you name any short or long term effects to your body that uncontrolled hypertension might cause?

Participant 5: I know it can definitely cause a heart attack cause my mom had one. And like tired, fatigue, I do know that.

Interviewer: Do you think that Hypertension is a common disease? If so, do some races or nationalities get it more than others?

Participant 5: Yes, it is very common and African Americans because of the choices of eating, the soul food eating. I know a lot of people that suffer from it and people that have passed away due to it so it does effect African Americans more.

Interviewer: What treatment plan has your doctor recommended for you?

Participant 5: I was prescribed 0.5mg Amlodipine, high blood pressure medicine to take once a day.

Interviewer: Are you able to follow this treatment plan daily? And if not, what about the plan do you find hard to follow?

Participant 5: Yes I follow it everyday. I take it at the same time everyday since 2018.

Interviewer: Do you feel the treatment plan is helping control your disease? If not, why not?

Participant 5: I guess it is cause I didn't know that I had it until my mom passed away and I was real stressed out and I kept visiting my doctor all the time cause I just felt like I was having a heart attack too but she said I was grieving. But I guess it is because I never had an issue with my blood pressure before my mom passed away it was after. And since I have been on the medicine when I take my blood pressure its back controlled.

Interviewer: Has your doctor encouraged you to exercise and/ or change the foods and drinks you have ? If so how are the lifestyle changes working for you?

Participant 5: Yeah, she prescribed that in 2018 but I was already mindful of what I ate and I like to workout and stay fit so before she suggested it I was already doing it myself.

Interviewer: To sum up, what is your overall attitude towards your hypertension diagnosis?

Participant 5: I don't have a problem with it. I'm not worried about it or upset about it. So I, it don't really bother me. I just take my medicine and go on with my everyday life.

Appendix C: Research Biases

In deciding on a research topic, I chose hypertension among impoverished communities because of the volunteer work I have done with this community for the past four years. I have volunteered over 1000 hours at the Hearts and Hands Clinic, the clinic I am conducting this study with. The clinic has a hypertension education program that is in need of improvement. One of the main goals of this research is to find valuable information and data to give back to the clinic to help them improve their hypertension education program.

From what I have seen from volunteering with patients, I believe those who are impoverished have a great disadvantage when it comes to medical care, especially for those diagnosed with hypertension. A hypertension diagnosis usually has a treatment plan that includes increased physical activity, decreased sodium intake, and daily medication. To the general population, these might be feasible, but the patients I have worked with have struggled with each of these treatment components. Reasons for lack of treatment adherence ranges from cost to time to lack of understanding.

I hope to gain answers from this study that will improve the hypertension education program, and help physicians better provide for their impoverished hypertensive patients. I have worked with patients who are homeless, and their physicians prescribe them a medication that costs several hundred dollars a month. It breaks my heart to see these people so desperate for care they cannot feasibly access.

With this background in mind, I might tend to analyze the data in a way that emphasizes the discrepancies among impoverished populations in the healthcare system. I have seen individuals lacking knowledge of hypertension, lacking access to medication

and other therapeutic methods recommended by their physicians. I might be prone to highlight data that emphasizes these things, when in reality the individuals in the study might have access to all aspects of their treatment plan and have a comprehensive understanding of their hypertension diagnosis.