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Perceptions of Hypertensive Adults With Low Health Literacy About Self-Management of Hypertension

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This is to certify that the doctoral dissertation by

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Abstract

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FNP, Charles Drew University of Medicine and Science, 2017

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Dissertation Submitted in Partial Fulfillment

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Abstract

Hypertension (HTN) is one of the most significant risk factors for morbidity and mortality worldwide and is responsible for the annual deaths of approximately 9 million people globally. A major problem with HTN self-management (SM) is low health literacy (HL), which is associated with poor health outcomes and self-care. The purpose of this explanatory sequential, mixed method study, guided by Pender's health promotion model, was to explore the perceptions of adults with HTN and low HL about the SM of their HTN. A total of 32 adults with HTN were screened using the Newest Vital Sign health literacy screening tool. Fifteen participants were found to have low HL and were interviewed by phone for 30 to 45 minutes. The participants' responses were transcribed and coded for categories and themes that indicated that a majority of adults with HTN and low HL recognize they need to perform SM activities but find SM requirements difficult to follow. Responses from the majority of participants indicated that stresses related to work, family life, and the COVID-19 pandemic have affected their ability to self-manage. Several participants expressed understanding the requirements of SM and reported following those requirements. In future research, HL skills, including cognitive skills (i.e., reading, writing, listening, speaking, numeracy), critical analysis, and interpersonal skills (i.e., communication and interaction abilities) should be studied to determine which are most associated with low HL. Positive social change may result when individuals who have HTN and low HL perceive that having their blood pressure under control is dependent on their being in charge and control of their health.

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Dedication

I dedicate this dissertation to my late mother, who when alive daily prayed for my success, to Patrick, my ever so supportive husband, to my immediate and extended family for their love and support, to all the teachers in my life for their motivations and guidance, to this research study committee members for all their encouragements and patience, and to all my patients especially those who inspired this research study.

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Chapter: 1 Introduction to the Study

Hypertension (HTN) is a chronic disease with a high rate of mortality that has become a global health priority, affecting about 1 billion people and causing over 7 million deaths annually (Tavakoly et al., 2020). HTN self-management (SM) comprises activities that individuals engage in to promote their own well-being including both pharmacological and non-pharmacological measures, such as adherence to taking medicines, blood pressure (BP) monitoring, follow-up consults, eating a healthy diet, exercising, not smoking, and abstaining from alcohol (Qiu et al., 2020). In 2017, the American Heart Association highlighted the significance of SM on building healthier lives and achieving optimal treatment outcomes (Mackey et al., 2016).

According to Warren-Findlow et al. (2019), a major barrier to HTN SM is health literacy (HL). HL is an ability to use general literacy skills (i.e., reading, writing, numeracy, listening and speaking) in obtaining, understanding, appraising, synthesizing, communicating, and applying health-related information (Liu et al., 2020). HL is regarded as an important prerequisite needed for an individual to take a pro-active role in their health and lifestyle and be able to perform as an active partner in encounters with health-care professionals and institutions (Rademakers & Heijmans, 2018). Improving HL has been recommended as a possible intervention goal to increase self-care behaviors (Barello et al., 2020). HL is noted to be a stronger predictor of outcomes than income, education, and race/ethnicity (Tavakoly et al., 2018). HL is believed to be a basic standard for patients to perform SM given that it is the personal traits and social resources needed for individuals to access, understand, appraise and use information and services to

make decisions about their health (Macleod et al., 2017). According to Tavakoly et al. (2018), SM approaches can result in improved health outcomes, particularly for those with chronic diseases like HTN. Managing chronic conditions requires individuals to choose healthier behaviors of their own choice and self-manage using a set of skills developed through information and support obtained from various educational and health care resources (Tavakoly et al., 2018).

Low HL is associated with poorer SM skills (Macleod et al., 2017), lower disease-specific knowledge, increased incidence of chronic disease, lower utilization of preventive health services, poorer self-reported health, higher risk of mortality especially among the older population (Kaphingst et al., 2020), and longer hospital length of stay (Jaffee et al., 2017).

In this chapter, I provide the background of the study, including the gaps in the literature and in practice. The problem statement, purpose of the study, and research question(s) are described in relation to the gap in the literature. The theoretical framework and nature of the study, based on the problem statement, purpose of the study, and research question(s) are explained. I also present definitions, assumptions, scope and delimitations, and the limitations. Finally, the significance of the study, including contributions to both knowledge and practice and implications for social change are reviewed.

Background

HTN is defined as an abnormally high arterial BP (Lee et al., 2018). According to the Joint National Committee 7, BP pressure is a systolic BP < 120 mmHg and diastolic

BP < 80 mm Hg. HTN is defined as systolic BP level of ≥140 mmHg and/or diastolic BP level ≥ 90 mmHg (Singh et al., 2017). HTN has been identified by the World Health Organization (WHO; 2019) as one of the most significant risk factors for morbidity and mortality worldwide. HTN is responsible for the deaths of approximately 9 million people annually worldwide (Kitt et al., 2019). This health problem continues to challenge clinicians, scientists, and health policy experts. In the last few decades, the vast amount of research and the discovery of numerous medications have resulted in a dramatic reduction in overall cardiovascular mortality, however, despite this, the prevalence of HTN and its disabling sequelae like stroke remains high (Retta et al., 2017).

According to Borges et al. (2019), the therapeutic control of high BP is influenced by the level of HL of individuals because the ability to understand medical information is significant to the maintenance of health status. Similarly, Chajaee et al. (2018) reported that one factor that may contribute to the SM of HTN is an individual's level of HL. According to Du et al. (2018), HL is the extent to which an individual is able to obtain, interpret, and understand basic health information and use health services. HL involves the use of a wide range of cognitive skills that improve the ability of people to act on health information such as reading, writing, listening, speaking, numeracy, and critical analysis, as well as interpersonal skills such as communication and interaction abilities (Health Literacy, n.d.).

Individuals with low HL are known to have poorer health outcomes and a higher mortality rate compared to individuals with adequate HL (Barello et al., 2020); hence, the

improvement of HL is a key outcome for individuals with HTN. To address the burden of patients' limited HL, healthcare systems need to redesign their services to support patients to effectively navigate, understand, and use information to take care of their health. This transformation can be accomplished by encouraging healthcare providers to embrace patient engagement as a guiding model to foster the patient's proactivity and autonomy in obtaining and using health information for an effective management of their care (Barello et al., 2020).

Developing patient experience with health literacy skills is a potential way to improve the clinical health outcomes and quality of life for patients with a chronic condition like HTN. Patient's cooperation in the treatment process is also known as an international gold standard for providers of medical care services (Tavakoly et al., 2020). Thus, patients with chronic diseases need adequate HL skills to control and manage their disease (Tavakoly et al., 2020).

Tavakoly et al. (2020) examined the effectiveness of communication skills training for physicians on HTN outcomes and the HL skills, self-efficacy and medication adherence in patients with uncontrolled BP. Their results showed that after the training, there was a significant improvement in physicians-patient communication skills, HTN outcomes, medication adherence, and self-efficacy among the patients being managed by the physicians that received training compared to the control group.

Mackey et al. (2016) conducted a study to assess the association between HL and patient characteristics related to SM behaviors (i.e., disease-related knowledge, beliefs, and self-efficacy). A significant association between low HL and poorer self-efficacy

was reported in cardiovascular diseases, diabetes, human immunodeficiency virus, and multiple disease categories. HL was significantly associated with poorer beliefs in respiratory, musculoskeletal, and cardiovascular diseases suggesting that low HL may affect behaviors necessary for the development of SM skills (Mackey et al., 2016).

Macleod et al. (2017) estimated the prevalence of inadequate HL among sicker and healthier populations of the Association for the Advancement of Retired Persons Medicare Supplement insureds to identify characteristics of inadequate HL and describe the impact on patient satisfaction, preventative services, healthcare utilization, and expenditures. Their results indicated that inadequate HL was associated with lower patient satisfaction and, preventive service compliance as well as higher healthcare utilization and expenditures being more common among older adults (Macleod et al., 2017).

Jaffee et al. (2017) conducted a cohort study to compare hospital length of stay among patients with low HL and those with adequate HL. Jaffee et al., found that low HL was associated with a longer hospital length of stay, suggesting that the adverse effects of low HL may extend into the inpatient setting and that targeted interventions may be needed for patients with low HL.

There is a lack of research that has addressed how hypertensive adults with low HL perceive the SM of their condition. In this study I addressed this gap in the knowledge base regarding factors related to the perceptions of SM in adults with HTN and a low HL. The results of this study could be used to inform clinicians and their patients with HTN about how the patients' self-care perceptions, behaviors and practices

affect their decisions to be healthy. Once patients come to this understanding their adherence to SM regimen can improve and a reduction in the potential of acquiring other comorbidities may be realized.

Problem Statement

Low HL is defined as difficulty in carrying out basic health-related tasks such as following prescription instructions, calculating dosages, completing medical history or insurance forms, communicating with providers, interpreting test results, and understanding the risks and benefits of procedures (MacLeod et al., 2017). A lack of reading skills is a factor that contributes to low HL. Marshall and Hale (2019) found that close to 20% of U.S. adults are unable to read, and another 30% cannot read at a fifth-grade reading level. Furthermore, 71% of adults older than age 60 struggled in using print materials, 80% struggled in using documents such as forms or charts and 68% had difficulty in interpreting numbers and doing calculations (Centers for Disease Control and Prevention, n.d.). Individuals with low HL are less likely to understand and act upon verbal and written information given by physicians, and are more likely to pay higher expenses for health-care services because they are more prone to suffer the consequences of poor health, use hospitalization and emergency services more and show little or no interest about preventive measures (Chajaee et al., 2018). In a cross-sectional study on hypertensive patients (N = 700) using multistage random selection and quota types sampling methods, Chajaee et al. (2018) found that the majority of patients with HTN had low HL and that there was a significant positive relationship between their knowledge about BP and the mean score of HL. Borges et al. (2019) noted that low HL

was found in more than 70% of the hypertensive patients investigated in a cross-sectional study of adults (*N*= 357).

Borges et al. (2019) and other researchers have assessed the HL of individuals in specific populations, such as adults; seniors and people with distinct health problems, such as diabetes, cardiovascular diseases and chronic kidney diseases; however, no studies have explored the perceptions of hypertensive adults with low HL as a key component for bringing understanding to the barriers to adequate SM and potential interventions to improve HL skills in hypertensive adults. l addressed this knowledge gap in the current study by exploring hypertensive adults' perceptions of HL skills in the SM of their BP.

Purpose

The purpose of this mixed method study was to explore the perceptions of adults with HTN and low HL, as determined by the Newest Vital Signs Health Literacy (NVSHL) measuring tool, about SM of their HTN. I used the NVSHL measuring tool as the screening tool to select participants with low HL skills who qualified for this study. Shiyanbola et al. (2016) and Huang et al. (2018) utilized the NVS HL measuring tool in selecting their study participants. According to Huang et al., the NVSHL is a six-item questionnaire, developed to enable researchers to measure and evaluate several HL dimensions in a variety of patients.

Research Question

What are the perceptions of adults with HTN and low HL, as determined by the NVSHL measuring tool, about SM of their HTN?

Theoretical Framework

The framework for this study was based on Pender's health promotion model (HPM). The HPM was developed to be a complementary counterpart to models of health protection (Current Nursing, 2011). In the HPM, health is defined as a positive, dynamic state rather than simply the absence of disease. The goal of health promotion is directed at improving a patient's level of well-being. In the HPM, the multidimensional nature of persons is described as they interact within their environment to pursue health. In the HPM, it is posited that each person has unique personal characteristics and experiences that affect subsequent actions (Current Nursing, 2011). Pender's model focuses on three constructs: individual characteristics and experiences(i.e., prior related behavior and personal factors), behavior-specific cognitions and affect(i.e., related factors perceived benefits of actions, perceived barriers to actions, perceived self-efficacy, activity related effect, interpersonal influences, norms, support, models and situational influences), and behavioral outcomes(i.e., immediate competing demands and preferences, commitment to a plan of action and health promoting behavior; Current Nursing, 2011). These constructs of the HPM served to frame the proposed study's research question(s). More details on the HPM will be presented in chapter 2.

Nature of the Study

In this this study, I employed a mixed methods approach guided by Pender's HPM. A mixed method research approach involves the application of a well-defined and prespecified research design that articulates purposely and prospectively, qualitative and quantitative components to generate an integrated set of evidence addressing a single

research question (Regnault et al., 2018). Hence, a mixed methods approach was appropriate because I sought to develop a rich description of the perceptions of hypertensive adults with low HL regarding SM of their HTN.

I first administered the NVSHL questionnaire to potential participants to determine their level of literacy. The information I gained from the HL questionnaire was used to describe the population, and then those who fell within the low HL score range and had a HTN diagnosis for 2 years were invited to participate in a one-on-one interview with me. The variables for the quantitative descriptive part of the study included years of HTN, and the level of HL. Frequency distributions and central tendencies were included in the quantitative analysis and the results were used to determine the sample of participants. The phenomenon of interest for the qualitative part of the study was the participants' perceptions of SM.

To analyze the interview data, I began by transcribing the interviews verbatim and subsequently coded relevant excerpts from the transcripts. The first step in analysis is to prepare a transcript that contains a full, accurate, word-for-word written rendition of the interview questions and answers. The analysis of the participants' interview responses also, includes defining, finding, and coding excerpts that have relevant concepts, themes, events, examples, names, places, and/or dates (Rubin & Rubin, 2011).

Definition of Terms

HL: Personal traits and social resources needed for individuals to access, understand, appraise and use information and services to make decisions about their health (Qiu et al., 2020).

HL skills: A wide range of cognitive skills such as reading, writing, listening, speaking, numeracy, and critical analysis, as well as interpersonal skills such as communication and interaction abilities (Health Literacy n.d.).

HTN: An abnormally high arterial BP. According to the Joint National Committee 7, normal BP is a systolic BP < 120 mmHg and diastolic BP < 80 mm Hg. HTN is defined as systolic BP level of ≥140 mmHg and/or diastolic BP level ≥ 90 mmHg (Singh et al., 2017).

Low HL: Difficulty in obtaining, processing, and understanding health information and services needed to make informed health decisions (Simmons et al., 2017).

NVSHL: A health literacy measuring tool used to screen and select participants who qualify for a study (Huang et al., 2018).

SM: Activities in which individuals engage to promote wellbeing with support from family, communities, and care providers. It encompasses both pharmacological and non-pharmacological management behaviors, such as adherence to taking medicines, BP monitoring, follow-up consults, healthy diet and exercise, non-smoking and abstaining from alcohol (Qiu et al., 2020).

Assumptions

The first assumption I made in this study was that the participants would understand the interview questions. I also, assumed that the participants would respond truthfully to interview questions. Another assumption was that all individuals with HTN desired to be able to understand the care that they must give themselves to achieve

optimum quality of life. Finally, I assumed that the NVSHL measuring tool would accurately reflect the HL status of participants.

Scope and Delimitations

The focus of this study was the perceptions of hypertensive adults with low HL regarding the SM of their HTN. The inclusion criteria for participation in this study was limited to adults (18 years and older) who have low HL, are alert and oriented, were diagnosed with HTN for at least 2 years, on anti-hypertensive medication(s), able to share perspectives, fluent in English language, who agreed to participate in the study and scored less than 4 (indicating low HL), on the NVSHL measuring tool. Therefore, hypertensive adults who were not willing to participate in the study, had adequate HL as determined by the NVSHL (i.e., scores between 4 and 6) measuring tool, were diagnosed with HTN for less than 2 years, were not on anti-hypertensive medication(s), were unable to share perspectives, and not fluent in English language were not eligible for this study.

I chose to use a mixed method approach an explanatory, sequential design for this study rather than solely the qualitative or quantitative methods because mixed method research studies allow for the strengths of one approach to complement the limitations of another (see Regnault et al., 2018). In terms of possible qualitative designs; ethnography focuses on culture, phenomenology is based on lived experiences, and grounded theory is about building a new theory for a study (Bradshaw et al., 2017). Quantitative research on the other hand, focuses on gathering numerical data and generalizing it across groups of people (Gray et al., 2016). The use of a mixed method research design is most suitable for this study given that mixed method research allows a

research question to be studied thoroughly from different perspectives (Regnault et al., 2018) unlike qualitative designs such as phenomenology which is designed to help the researcher understand the essence of a phenomenon from the perspective of participants who have experienced it (Qutoshi, 2018) or quantitative methods alone that emphasize objective measurements and numerical analysis of data collected through polls, questionnaires or surveys (Gray et al., 2016).

I used the Pender's HPM for this study given that it provided a basis through which a patient's behavior can be influenced to embrace preventive strategies (IvyPanda, 2020) rather than health belief model which is used to explain and predict individual changes in health behaviors (Rural Health Information Hub, n.d.).

Limitations

This study focused on hypertensive adults with low HL, and as such, the results may not be generalizable to individuals with adequate HL or with other health conditions. Another limitation of this study was the use of sample of participants from a particular locality that may make study results non- transferable to other localities.

Significance

HL is essential for successful access to care and use of services, self-care of chronic conditions, and maintenance of health and wellness (Healthy People 2020, n.d.). Low HL skills result in poor SM. According to Palumbo (2015), low HL has been described as a strong barrier to the access of healthcare services. Adequate HL includes being able to read and comprehend essential health-related materials (Healthy People

2020, n.d.). Adequate HL is a contributing factor to better BP control and better perceived quality of life in hypertensive patients (Shi et al., 2017).

According to Chajaee et al. (2018), HL determines the effectiveness of health information through patients accepting or rejecting healthy measures. McKenna et al. (2020) noted that HL is an important factor in the maintenance and improvement of health as well as a crucial component in the SM of illnesses. Additionally, low HL predisposes problems with reading medication labels, following medication schedules, comprehending appointment notifications and informed consent documents, appropriate processing of oral communication, and evaluation of medical risks (Hussain et al., 2020). Furthermore, low HL is associated with inadequate control of chronic health conditions (Alkhaldi et al., 2018). In contrast, people with adequate HL have the ability to read and understand educational written materials (i.e., functional skills); to communicate with health care professionals (i.e., interactive skills); to make appropriate health decisions (i.e., critical skills); and to measure medication dosages (i.e., numeracy skills; Du et al., 2018).

Because HL skills have been shown to impact patient outcomes related to BP control, it is important to comprehend how individuals with HTN and low HL manage their self-care. Through doing so, potential interventions that support HL may support positive patient outcomes at the individual and societal levels, leading to positive social change. According to Quinn et al. (2018), low HL leads to poor knowledge and understanding of health information, delayed diagnosis, lower use of preventative medicines/health services, increased likelihood of hospitalization, and increased patient

anxiety. Hence, the WHO emphasized HL as an important strategy to improve the active participation of individuals in their disease management process (Javadzade et al., 2018).

The results of this study may affect positive social change by providing information about HL skills and SM behaviors that can be used by individuals with HTN to improve their quality of life and the society.

Summary

Many hypertensive adults have difficulty with appropriate SM of their high BP. The primary focus of this chapter was to introduce relevant areas of the study, their meanings, and how they may relate to the study population and SM of HTN. In Chapter 2, I will provide a more detailed review of the literature as well as identify the key issues and gaps related to this study.

Chapter 2: Literature Review

Globally, HTN is the strongest modifiable risk factor for cardiovascular disease and related disability (Cappelletti et al., 2020). According to Cappelletti et al., HTN causes 9.4 million deaths worldwide every year and it remains the leading risk factor for disability-adjusted life years. Cappelletti et al. also, reported that despite extensive knowledge about ways to prevent and treat HTN through individual lifestyle changes, healthy behaviors and medication adherence are still suboptimal, leading to adverse cardiovascular effects. Lifestyle modifications, such as increasing physical activity and dietary modification are often suggested as the first step for controlling high BP, however, one of the most important strategies to improve a healthy lifestyle is to increase knowledge and promote HL among people. HL is an effective factor in controlling BP (Gaffari-Fam et al., 2017) because the person with HTN must understand BP measurements, risk factors and complications, necessary lifestyle changes, and aims of treatment to self-manage their BP (Bonaccorsi & Modesti, 2017). Low HL serves as a potential mediator of health disparities and has been associated with poor health outcomes, including poor self-care and preventive behaviors (Vila-Candel et al., 2020).

Several researchers, including Borges et al. (2019) have assessed the HL of individuals in specific populations, such as adults; seniors, and people with distinct health problems, such as diabetes, cardiovascular diseases and chronic kidney diseases, however, no studies have explored HL as a key component for developing an understanding of the barriers to adequate SM and potential interventions to improve HL in hypertensive adults. The purpose of this study was to explore the perceptions of adults

with HTN and low HL about SM of their HTN. The results of this study can be applied to policies, strategies, and the development of new interventions designed to build knowledge, HL, and SM skills for patients with HTN so they can improve their quality of life and, hence, affect social change.

In this chapter, I discussed the literature search strategies and theoretical foundation of the study before presenting a review of the literature related to HTN, SM of HTN, and HL.

Literature Search Strategies

I used the search engines of the following nursing, health sciences, educational, and multidisciplinary databases, accessed through the Walden University Library, to search for relevant literature: CINAHL, Medline, PubMed, ERIC, ProQuest and Science Direct. References identified through the reference lists of reviewed articles were also searched for through the Walden University Library to gain access to the full manuscript. The following keywords search terms were used: *hypertension/high blood pressure, health literacy, low health literacy, self-care, self-management, health literacy assessment, numeracy, readability, patient education, functional health literacy, health literacy and high blood pressure, health literacy and self-management, health literacy and self-care, health literacy skills, low health literacy and hypertension, low health literacy and selfcare, and low health literacy and self-management.* My literature searches were primarily focused on studies published within the past 5 years.

Theoretical Foundation

The theoretical foundation for this study was based on Pender's HPM. Pender's HPM theory was originally published in 1982 and later revised in 1996 and 2002 (McEwen & Wills, 2011). The model was created from expectancy-value theory and social cognitive theory using a nursing perspective (McEwen & Wills, 2011). The HPM was designed to be a "complementary counterpart to models of health protection" (Nursing Theory, n. d, para1). In the Pender's HPM, health is defined as a positive, dynamic state rather than merely the absence of illness and is directed at increasing a person's level of well-being (Nursing Theory, n. d, para1). In the HPM, the multi-dimensional nature of individuals are described as they interrelate within the environment to pursue health (Nursing Theory, n. d.).

Major Concepts of the HPM

Pender's HPM concentrates on three major concepts; individual characteristics and experiences, behavior-specific cognitions and affect, and the behavioral outcomes (Butts & Rich, 2018). According to the first concept, each individual has their own set of characteristics and experiences, which in turn help shape their behaviors (Butts & Rich, 2018). Pender emphasized that an individual's past actions have a direct link to whether they would partake in future health-promoting behaviors (Butts & Rich, 2018). The second concept involves the behavior-specific cognitions and affect that have a direct impact on the individual's motivation for change (Butts & Rich, 2018). Nursing interventions can be tailored to these variables including observed benefits and barriers to the action, self-worth, and the activity-related result, to assist in forming positive

changes. The third concept is the behavioral outcomes and the outcomes begin with an individual committing to taking the steps necessary to make a change. During this phase, the individual must be supported with barriers addressed to produce a positive health-promoting behavior (Butts & Rich, 2018). Health promotion behavior should result in improved health, enhanced functional ability, and better quality of life at all stages of development (Current Nursing, 2020).

Assumptions of HPM

In the past, models of healthcare focused mainly on strategies aimed at recovering health, however, at present, more attention is being given to strategies oriented towards prevention of illnesses and health promotion (Khodaveisi et al., 2017). According to WHO, health promotion is the improvement of people's health by enabling them to increase control over their health and its determinants (Rural Health Information Hub, n. d). Health promotion covers a wide range of social and environmental interventions that are designed to benefit and protect people's health and quality of life by addressing and preventing the root causes of illness and not only focusing on treatment and cure (Rural health Information Hub n. d). The following assumptions of Pender (2011) in the HPM reflect both nursing and behavioral science perspectives and emphasize the active role of the individual in managing health behaviors by modifying the environmental milieu.

1. Persons seek to create conditions of living through which they can express their unique human health potential.

2. Persons have the capacity for reflective self-awareness, including assessment of their own competencies.

3. Persons value growth in directions viewed as positive and attempt to achieve a personally acceptable balance between change and stability.

4. Individuals seek to actively regulate their own behavior.

5. Individuals in all their biopsychosocial complexity interact with the environment, progressively transforming the environment and being transformed over time.

6. Health professionals constitute a part of the interpersonal environment, which exerts influence on persons throughout their lifespan.

7. Self-initiated reconfiguration of person-environment interactive patterns is essential to behavior change (Pender, 2011, p. 5).

Theoretical Propositions of HPM

Theoretical statements derived from the model provide a basis for investigative work on health behaviors. The HPM is based on the following theoretical propositions:

1. Prior behavior and inherited and acquired characteristics influence beliefs, affect, and enactment of health-promoting behavior.

2. Persons commit to engaging in behaviors from which they anticipate deriving personally valued benefits.

3. Perceived barriers can constrain commitment to action, a mediator of behavior as well as actual behavior.

4. Perceived competence or self-efficacy to execute a given behavior increases the likelihood of commitment to action and actual performance of the behavior.

5. Greater perceived self-efficacy results in fewer perceived barriers to a specific health behavior.

6. Positive affect toward a behavior, results in greater perceived self-efficacy, which can in turn, result in increased positive affect.

7. When positive emotions or affect are associated with a behavior, the probability of commitment and action is increased.

8. Persons are more likely to commit to and engage in health-promoting behaviors when significant others model the behavior, expect the behavior to occur, and provide assistance and support to enable the behavior.

9. Families, peers, and health care providers are important sources of interpersonal influence that can increase or decrease commitment to and engagement in health-promoting behavior.

10. Situational influences in the external environment can increase or decrease commitment to or participation in health-promoting behavior.

11. The greater the commitments to a specific plan of action, the more likely health-promoting behaviors are to be maintained over time.

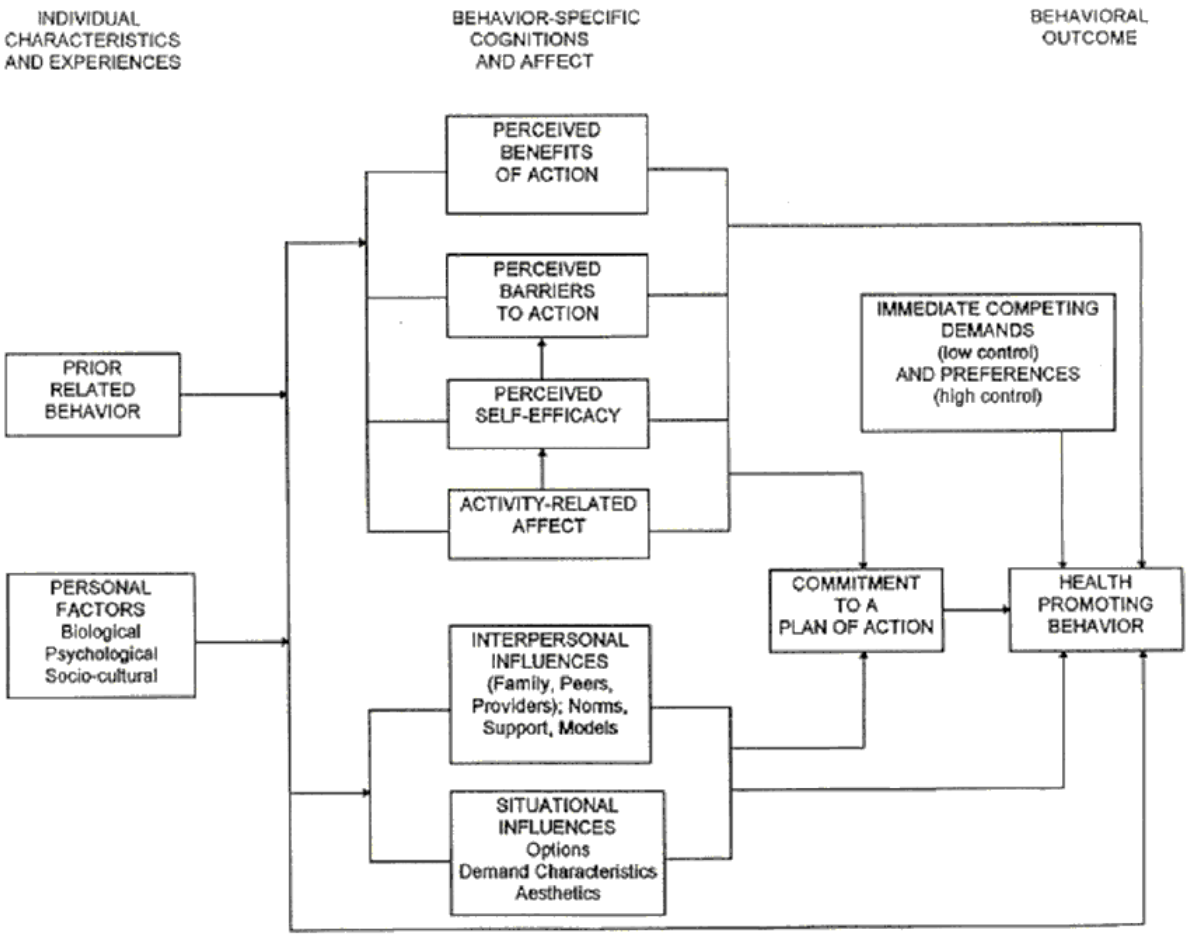
12. Commitment to a plan of action is less likely to result in the desired behavior when competing demands over which persons have little control require immediate attention.

13. . Commitment to a plan of action is less likely to result in the desired behavior when other actions are more attractive and thus preferred over the target behavior.

14. Persons can modify cognitions, affect, and the interpersonal and physical environment to create incentives for health actions (Pender, 2011, p 5-6).

Figure 1

The HPM Diagram



Literature and Research-Based Analysis of Theory

The HPM has been used in a number of studies including Voskuil et al. (2019) who sought to determine if the HPM would assist in predicting physical activity in the selected demographic group. The health benefits of moderate physical activity are well established yet many young people are falling short in achieving optimal physical activity (Voskuil et al., 2019). The researchers collected information on participants' self-efficacy, enjoyment, social support, options, and commitment to physical activity. Data,

including age, body mass index, and pubertal state were also collected. Their study followed the adolescent girl participants over a 17-week period as they underwent a physical activity intervention to examine if the introduction of such an intervention would result in lasting, moderate-to-vigorous physical activity. The researchers selected the HPM due to its previous success in exploring the explanations for health-promoting behavior in a number of different populations.

Goudarzi et al. (2020) described poor adherence in treatment and medication as a global issue in curing chronic diseases such as HTN. Their cross-sectional study was conducted on 463 patients using the cluster sampling method and based on the Pender's HPM. They used a questionnaire including demographic variables and Pender's HPM constructs to collect data and analysis was by Statistical Package for the Social Sciences 18 software and Pearson correlation coefficient and linear regression. The authors noted the strengths of their study to include the application of Pender's HPM, which provided the possibility of studying the different determinants of behaviors, and the focus on hypertensive patients in urban health centers, because most studies in this area so far had been conducted only among patients in rural health centers.

Khodaveisi et al. (2017) studied the effect of Pender's HPM on the nutritional behaviors of overweight women. Obesity is a chronic disease seen at an increasing rate worldwide (Shariq & McKenzie, 2020). In their quasi-experimental study, 108 qualified women whom were admitted to the Fatemiyeh hospital clinic in Iran were randomly placed in the experimental or the control group. The chose the HPM for their study due

to its emphasis on changing unhealthy behaviors and health promotion. Khodaveisi et al. collected data using questionnaires completed at the pre-test and post-2-month period. The training interventions included educational presentations, question-and-answer sessions, and group discussions. The results from their study showed Pender's HPM-based training resulted in an improvement in nutritional behavior (Khodaveisi et al., 2017). The study was successful in teaching the benefits of healthy nutrition. Positive attitudes from the individuals and from their family members led to longstanding improvements in the participants' nutritional behaviors. Their study demonstrated the importance of the health-care professional in influencing healthy nutritional behaviors and promoting health. They recommended educational programs should be tailored to emphasize the promotion of healthy living and nutrition.

Rationale for Selecting Theory and its Relationship to Study

I choose Pender's HPM because it provides a basis through which a patient's behavior can be influenced to embrace preventive strategies. For instance, a patient suffering from a sexually transmitted infection can be educated on how to improve their health and made to understand the need for using protection. Furthermore, the research by Bauer (2008) was informed by the increasing number of patients suffering from preventative diseases, such as obesity and HIV/AIDS. The spread of HIV/AIDS can be prevented through the use of protection, while HTN can be avoided by adopting healthy lifestyle (IvyPanda, 2020). The current study posits that perceptions inform an

individual's decision to commit to a plan of action to promote health. Consequently, one can conclude that a patient can be influenced to help in the prevention of diseases.

Literature Review Related to Key Variables

Lack of knowledge regarding HTN is one of the most important reasons for ignoring the consequences of high BP. Ineffectively controlled BP can lead to complications such as heart attacks, heart failures, brain strokes, chronic kidney diseases, vision loss, and vascular diseases (Chajaee et al., 2018). One factor that may contribute to SM of HTN is an individual's level of HL. Hence, expanding patients' knowledge about HTN and related advantages of a healthy lifestyle is the key to controlling the disease (Chajaee et al., 2018).

As a result of my search of the literature and the plan for this mixed methods dissertation study, I identified several key variables. They are listed in the following section and cover HTN, and HL. Studies identified in the literature search are incorporated and synthesized into the two major variables of this study.

HTN

HTN is one of the most prevalent diseases worldwide and a well-recognized risk factor for the majority of morbidities, such as cardiovascular, cerebrovascular, and peripheral arterial diseases, as well as mortality (Adinkrah et al., 2020). HTN is the most common chronic disease in the United States, affecting more than 45% of adults and remains the most frequent diagnosis made in primary health care visits (Milani et al.,

2020). HTN can be asymptomatic (Aronow, 2020) and hence sometimes called the silent killer ((Delavar et al., 2020). HTN management is still poor even in developed countries, such that only 29%–50% of patients with HTN who receive treatments have controlled BP (Delavar et al., 2020). HTN was found in 69% of patients with first myocardial infarction, 77% of first stroke patients, in 74% of heart failure patients, and 60% of older patients with the peripheral arterial disease (Aronow, 2020). Accordingly, the WHO has also introduced HTN as the 3rd leading cause of death worldwide, with one in eight deaths due to HTN (Bijani et al., 2020)

HTN occurs when the BP, the force of blood pushing against the walls of the blood vessels, is consistently too high (what is high blood pressure? n. d). BP measurement entails two types of pressure; systolic and diastolic. Systolic pressure occurs as blood pumps out of the heart and into the arteries and is elevated when over 129mmHg. Diastolic pressure is created when the heart rests between beats and is elevated when it is over 80mmHg. Elevated BP can cause harm by increasing the workload of the heart and blood vessels. Stage 1 HTN is a systolic pressure between 130 mm Hg and 139 mm Hg, and a diastolic pressure between 80 mm Hg and 89 mm Hg. Stage 2 HTN occurs when the systolic pressure is 140 mm Hg or higher and the diastolic is 90 mm Hg or higher. The patient is in a hypertensive crisis when the systolic pressure is higher than 180 mm Hg and the diastolic is higher than 120 mm Hg. A 10 mm Hg reduction in systolic BP can reduce the risk of cardiovascular mortality by 13% (Stewart et al., 2020).

Risk factors that increase an individual's chances of developing high BP are smoking, having diabetes, being overweight or obese, having high cholesterol, being sedentary, and consumption of unhealthy diet. Individuals with HTN are at a greater risk for stroke, vision loss, heart failure, myocardial infarction, sexual dysfunction, and kidney disease (Stewart et al., 2020). Significant positive correlations exist among HTN and age, Body Mass Index, High Density Lipoprotein, Triglycerides, Blood Urea Nitrogen, Alkaline phosphatase, smoking, physical activity, cardiovascular diseases, diabetes, and renal failure (Bijani et al., 2020). Nevertheless, people with HTN can learn strategies to manage their chronic condition and live a healthier life through SM efforts (Delavar et al., 2020). SM includes the activities that individuals engage in to promote wellbeing with support from family, communities and care providers. SM incorporates both pharmacological and non-pharmacological management behavior such as adherence to taking medicines, BP monitoring, follow-up consults, healthy diet and exercise, non-smoking and abstaining from alcohol (Qiu et al., 2020).

HTN and Self-Care

HTN is a chronic disease that requires a healthy lifestyle, medical treatment and self-care (Yeom, 2021). HTN, defined as a systolic BP over 140 mmHg or a diastolic BP over 90 mmHg, has various causes, including demographic characteristics such as age, gender, health status, lack of self-care behavior, other chronic diseases, and health-care providers' misguided attitudes (Lee, 2017). HTN management and outcomes are dependent on the effectiveness of self-care in terms of following through with care plans

established with health care providers (Moss et al., 2019). Patients' self-care behaviors play an important role in HTN management and the non-adherence to HTN self-care behaviors results in poor BP control (Ma, 2018). In managing HTN, BP monitoring and medication use are key strategies, but are dependent on patients' motivation to practice self-care (Bajorek et al., 2017). Despite the availability of several effective pharmacologic and non-pharmacologic therapies, HTN control remains suboptimal worldwide due to poor adherence to HTN self-care behaviors (Niriayo et al., 2019). Factors such as socioeconomic status, belief about medications, comorbidity, availability of medications, access to healthcare, level of HL, number of medications, duration of therapy, age, gender, culture, educational status, and knowledge of the disease and treatment are associated with the rate of adherence to self-care behaviors (Niriayo et al., 2019).

Self-care is the ability of individuals, families, and communities to promote health, prevent disease, maintain health, and to cope with illness and disability with or without the support of a health-care provider (Lee, 2017). The most important strategy for controlling BP and maintaining it in the optimal range is patient compliance with self-care behaviors (Kes & Gökdoğan, 2020). Self-care behavior as an essential component of HTN management could help to reduce complications, morbidity, and mortality (Lee, 2017). Self-care behaviors play an important role in primary prevention of HTN as well as secondary prevention as a complement to medication therapy in improving BP control (Warren-Findlow et al., 2020). Administration of self-care, treatment compliance and regular BP rechecks are essential to achieving HTN management (Farahmand et al.,

2019). Lack of self-care threatens the health and well-being of patients, hence, the need for hypertensive individuals to carry out self-care activities, such as using medication regularly to control their BP, smoking cessation, exercise and weight control, regular physical activity, measuring BP at home, attending checkups, moderation in consumption of alcohol, restriction in salt intake, dietary modification, and coping with stress (Kes & Gökdoğan, 2020). Not performing self-care activities leads to an increase in the rate of HTN-related complications and death (Kes & Gökdoğan, 2020).

HL

HL has been defined as the degree to which individuals are able to collect, process, and comprehend basic health information needed to make appropriate health-related decisions (Huang et al., 2018). HL is believed to be a basic criterion for patients to perform SM activities (Qiu et al., 2020). People with adequate HL have the intellectual and social skills to determine the motivation and ability to gain access to, understand and use information in ways that promote and maintain good health. HL has been affected by different physical, mental, and psychological factors (Delavar et al., 2020). HL is the range of skills and competencies that people require to find, comprehend, evaluate, and use health information and concepts to make informed choices, reduce health risks, and improve their quality of life (Meherali et al., 2020). HL skills such as writing, speaking, reading and performing mathematical calculations are necessary for the care and improvement of the health conditions of individuals with chronic conditions, especially those with HTN (Borges et al., 2019). Compared to individuals with adequate HL, patients with low HL are more likely to have poorer health

outcomes, lower medication adherence, increased hospitalization, higher mortality, and higher health care costs, associated with their difficulty in comprehending health information, following medical instructions, and performing self-care tasks (Huang et al., 2018). Patients with adequate HL have better HTN control, a lower risk of ischemic cardiovascular disease, lower brachial ankle pulse wave velocity values, and better health-related quality of life while low HL increases the 10-year risk of ischemic cardiovascular disease and incidence of artery stiffness in hypertensive patients (Shi et al., 2017). Low HL is associated with worse health decisions and outcomes. People with low HL have difficulties communicating effectively with health care providers (Nguyen et al., 2020). Low HL is associated with insufficient knowledge about health and the health care system, poor access, and use of health services and increased hospitalization leading to poor health outcomes and health inequalities (Meherali et al., 2020). Low HL is further associated with worse access to healthcare, increased number of hospitalizations, lower use of preventive care, greater use of emergency care, poorer ability to understand medical materials, poorer medical adherence, and poorer knowledge of chronic diseases (Rolova et al., 2020). Among patients with uncontrolled HTN, low HL was highly prevalent and strongly associated with worse medication SM (Persell et al., 2020). Individuals with low HL have worse physical and mental health status and a higher mortality rate than those with adequate HL. HL levels might also influence the protective effect of preventive programs and treatment outcomes. People with adequate HL have been shown to be more likely to adopt protective methods and have the preparedness to get protected from diseases (Nguyen et al., 2020). HL is a measurable

outcome to health or patient education and can be improved through the provision of information, effective communication and structured education. Improvements in HL can be assessed through the measurement of changes to the knowledge and skills that enable well-informed and more autonomous health decision-making (Nutbeam et al., 2018). Promoting HL is critical to active and informed participation in health and health care and is a key action to reduce health inequalities. Improving people's access to health information and their capacity to use it effectively also empowers them to take a firmer and more active role in their own, families and community's healthcare (Meherali et al., 2020). According to Borges et al. (2019), low HL was found in more than 70% of hypertensive patients investigated in his study, reinforcing the need to improve the self-care skills of hypertensive patients, especially the older ones and those with few years of schooling. Similarly, the level of education, home BP measurement, and regular medication use (Shi et al., 2017), chronic condition medications reconciliation, knowledge of chronic condition medications, and understanding of instructions and dosing were significantly associated with HL (Persell et al., 2020). Schaeffer et al. (2017) noted that low HL can impair communication between doctors and patients and exacerbate existing problems in health policy and therefore, recommended that greater efforts should be made to foster HL, make health-related information for patients easier to understand and intensify research in the field of HL.

HL and HTN Self-Care

A major barrier to HTN self-care is HL. HL is as an individual's ability to find and apply health-related information in making informed health choices (Higgins &

Scott, 2019). Improved HL has been recommended as a possible intervention target to increase medication adherence as well as other HTN self-care behaviors (Warren-Findlow et al., 2019). Individuals with low HL may not understand fully what they were told during medical communication. Moreover, patients with low HL may be ashamed by their condition and hide their low literacy level from health-care providers who could possibly help them (Javadzade et al., 2018). HL influences the management of chronic illnesses such as HTN and is not all about reading and numeracy skills but includes using those skills to seek, comprehend, and use health information to make decisions to improve health (Warren-Findlow et al., 2019). Patients' ability to identify their antihypertensive medications by name has been associated with HL and as well as increased adherence, better BP control, and less hospitalizations (Warren-Findlow et al., 2019).

Self-care behaviors and BP control become worse when hypertensive patients have low HL. Low HL may impact the ability to perform tasks such as understanding basic written health information or reading a prescription correctly. Low HL is associated with worse HTN-related knowledge, lower ability to identify HTN medications, and reduced adherence to cardiovascular medication refills (Larki et al., 2018). HL is a key component of the set of skills needed to improve self-care and control chronic diseases like HTN (Borges at al., 2019).

Because no study to the best of my knowledge has linked the three variables; HTN, low HL and SM, there is a gap in the literature. The present study will fill this gap in the literature by examining the relationship among these three variables.

Summary

HL is increasingly being recognized as a powerful and important factor in the delivery of health-care which not only includes the consumer, but the health care system at large (Rheault et al., 2019). Most definitions specify HL as an individual cognitive skill, and surveys such as the European Health Literacy survey which ask people to self-rate their decision-making capacity in the health system, grade a majority of the population as having a low HL (Samerski, 2019). HL is not only the ability to read and write but also encompasses a wider array of competencies to manage one's health (Rheault et al., 2019). HL involves the consultation, engagement and communication with health-care providers and the navigation through complex health-care systems, the critical appraisal of health information from different sources, the social support needed to access services and maintain good health, and understanding ones' rights as health-care consumers (Rheault et al., 2019).

The burden of low HL at the population level is significant, hence advancing knowledge about HL can be a tool for disease prevention (Villani & Trivedi, 2020). High-quality care requires patient awareness of preventive care, regular BP screening, effective communication between health-care providers and patients, involvement of other clinical specialties, and active SM by patients which requires HL (Dzau & Balatbat, 2019)

This mixed method study was guided by the Pender's HPM because it explained change and maintenance of health-related behaviors and as a guiding framework for

health promoting and behavioral interventions activity for individuals with HTN (Goudarzi et al., 2020; Khodaveisi et al., 2017; & Voskuil et al., 2019).

Understanding how adults with low HL and HTN perceive HTN SM is critical to the success of measures for control. This study will serve to address this gap in the collective knowledge base regarding factors related to HL and SM of HTN in hypertensive adults with low HL. Results of this study may provide much needed insight into the relationship between HL and the reasons for poor and/or adequate SM in the treatment and control of HTN. The information gained from this study could help to inform stakeholders, specifically health care practitioners, regarding factors associated with SM in the context of HTN. The findings also may lead to strategies for improving self-care to reduce the negative health outcomes associated with HTN.

This chapter has presented the theoretical framework for the study and research on the key variables, including HTN, HL, and SM of HTN.

In Chapter 3, I will provide a discussion of the methodology that will be used to collect and analyze the data needed to address the research question.

Chapter 3: Research Method

The purpose of this mixed method, explanatory, sequential study was to explore the perceptions of adults with HTN and low HL, as determined by the NVS HL measuring tool about SM of their HTN. In this chapter, I provide an overview of the study design and rationale, sample selection, chosen instrumentation, data analysis, threats to validity, and ethical procedures.

Setting

The research population consisted of members of selected faith-based organizations located in the western United States. According to the U.S. 2010 census, the areas in the western United States from which I recruited my sample have a population of approximately 2 million residents (San Fernando Valley CCD, Los Angeles County Ca, n. d). This population comprised 79% adults, 21% of whom were below 18 years of age as well as 51% females and 49% males. The racial makeup was made up of mainly Hispanic Americans (42%), European Americans (40%), Asian (11%), African Americans (4%), and others (2%; San Fernando Valley CCD, Los Angeles County Ca, n. d). Furthermore, 82.2% of the residents were high school graduates and 34.9% had a bachelor's degree or higher. English is the official language for business and government affairs in this region.

Research Design and Rationale

HL is a strong indication to maintain control of BP, adherence to therapy and SM of disease (Yilmazel & Çetinkaya, 2017). HL is a wide spectrum of skills and a competency that has considerable impact on health care processes to develop,

comprehend, evaluate and use health information and concepts (Yilmazel & Çetinkaya 2017).

My research question addressed how adults with HTN and low HL, as determined by the NVSHL measuring tool, perceive the SM of their HTN. Determining perceptions of a certain group requires a more in-depth picture than can be accomplished with either a quantitative or a qualitative method alone (Creswell & Creswell, 2017), hence, I used a mixed method, explanatory, sequential design in this inquiry. Mixed methods research is an approach where the researcher combines or integrates quantitative and qualitative research data in a single study (Creswell & Creswell, 2017), to answer different stages or parts of a complex research question (Gray et al., 2016). In an explanatory, sequential design, the quantitative phase is first conducted followed by the qualitative phase with the initial quantitative data results being explained further with the qualitative data (Creswell & Creswell, 2017).

For the quantitative portion of this study, I used the NVS HL screening tool to determine participants who had low HL. The NVS is a functional HL assessment tool, constructed to assess reading, numeracy and functional HL (Ylitalo et al., 2018). Administration time ranges from 2 to 6 minutes, and it has a high sensitivity to detect limited HL. To determine individuals' HL level, they are given a specified nutrition label and asked to answer six questions. A score of less than 4 out of 6 identifies individuals who have low HL (Ylitalo et al. 2018). The second part of this study was the qualitative interview of participants who had low HL as determined by the NVSHL screening tool.

The Role of the Researcher

As the researcher, I was the primary data collection tool for this mixed methods study by coordinating and communicating with the faith-based organizations that served as the source of study participants. I designed and conducted the interviews as well as coded the interview data into categories and themes. While I may have known some of the participants as individuals who worship in the same faith-based organization as myself, I had no supervisory or instructional relationship with any of them. A researcher bias I may have held during the study was the belief that participants have the ability to develop their HL skills. I managed this bias by focusing solely on the research question and the data generated from the interviews. This study was conducted outside of my work environment and as such, there were no conflicts of interest or power differentials between the participants and myself. I ensured that the interviews were conducted at a time that was most convenient for the participants. Study participants received a $10 gift card for their participation.

Participant Selection Logic

The population for this study were members of selected faith-based organizations in the western United States who met the study inclusion criteria. I recruited participants by directly inviting them to participate in the study. Those who agreed to participate and met the inclusion criteria were asked to sign the consent form, screened using the NVS HL measuring tool to ascertain their level of HL, and interviewed. The inclusion criteria for participation were: adults (i.e., 18 years and older) who have low HL, are alert and oriented, diagnosed with HTN for at least 2 years, on anti-hypertensive medication(s),

able to share perspectives, fluent in English language, and scored less than 4 (indicating low HL), on the NVSHL measuring tool. Hypertensive adults who were not willing to participate in the study, have adequate HL as determined by the NVSHL measuring tool (i.e., scores between 4 to 6), were diagnosed with HTN for less than 2 years, were not on anti-hypertensive medication(s), were unable to share perspectives, and not fluent in English language were excluded from this study.

There was no specific sample size designated for this study, rather, the recruitment and interview process were continuous until saturation was reached. I identified and contacted participants using their demographic data provided during the screening and interview process.

Instrumentation and Operationalization of Constructs

Qualitative Components

The qualitative research instrument consisted of six interview questions (see Appendix A). Interviews provide deep, rich, individualized, and contextualized data that are centrally important to research (Ravitch & Carl, 2019). I developed the interview questions to be open-ended and address each of the three concepts of Pender's HPM: individual characteristics and experiences, behavior-specific cognitions and affect, and, behavioral outcomes. The interviews lasted between 30 to 45 minutes and were audio recorded with each participant's permission. I informed each participant that they could end the interview at any point if they did not wish to continue. Each participant was asked to review their responses before the interview was completed to ensure the

accuracy of the collected data. The responses were then transcribed and coded for data analysis.

Quantitative Components

The quantitative instrument was the NVSHL screening tool, which is one of the most widely used HL screening instruments available in English and Spanish (Weiss, 2018). Weiss et al., (2005) introduced the NVSHL measuring tool, an instrument that can be used to quickly assess HL when conducting a study to develop a quick and accurate screening test for limited literacy available in English and Spanish. Their study results indicated that the NVSHL is suitable for use as a quick screening test for limited literacy. The NVSHL has been validated for the use of identifying people with low HL skills in the United States and other countries, including the United Kingdom, the Netherlands, Italy, Kuwait, Brazil, China, and Canada. The NVS has also been adapted for administration in American Sign Language (Weiss, 2018). The NVSHL is reliable (Cronbach alpha >0.76 in English and 0.69 in Spanish) and correlates with the Test of Functional Health Literacy in Adults (Weiss et al. 2005). To determine an individual's HL level using the NVSHL screening tool, I presented the individual with a self-administering questionnaire regarding the nutrition label of a container of ice cream. The questionnaire was made up of six questions about the nutritional label (see Appendices B and C). Correct responses require the ability to identify and interpret basic text and perform simple mathematical computations (Weiss, 2018). The assessment takes 2 to 3 minutes with zero to one correct responses being an indication of a high likelihood of low

HL, two to three correct responses showing a possibility of low HL and a correct score of four to six indicating adequate HL (Weiss, 2018).

Procedures for Recruitment, Participation, and Data Collection

I recruited participants from selected faith-based organizations based on my inclusion and exclusion criteria. I created and posted flyers on the organizations' notice boards to create awareness and invite people to participate in the study (see Appendix D). Before conducting interviews, I provided a clear explanation of the rationale for the design of the study and methods used. I also welcomed and answered participants questions related to the study topic. As an indication of their agreement to participate in the study, each participant was asked to sign an initial consent form to participate in the quantitative part of the study and later another consent form if they qualified to participate in the qualitative part of the study. Qualitative data were collected through participants' responses to the six interview questions. The interviews were a one-time process; however, with their consent, I provided participants with my email address to contact me if they wanted a copy of their transcript emailed to them. This offer was given after a set period of time that enabled me to have time to get the transcriptions completed and email the transcripts to them.

Data Analysis Plan

For the quantitative portion of this study, I used the NVS HL measuring tool to screen for participants who had low HL. The NVSHL is brief and valid, functional HL assessment tool (Ylitalo et al. 2018). The NVSHL is a six-item questionnaire, developed

to enable researchers to measure and evaluate the HL level of individuals (Huang et al., 2018).

I analyzed the qualitative data by transcribing the interviews verbatim and subsequently hand coding relevant excerpts from the interview transcripts. Themes were categorized according to each question and those that emerged as overall themes. I analyzed discrepant cases in the same way as the rest of the data. In the Results section, I will report the cases along with possible reasons deduced from the data as to why the specific discrepant case is different from the rest. All identifying participant information was removed from the interview transcripts to maintain participant confidentiality.

Data Integration

The goal of integration is for the quantitative data to help explain the qualitative data (Creswell & Creswell, 2019). I used the NVSHL tool to screen each participant for their HL level. An individual with a HL level score of less than four qualified for the study. I recorded the participants' scores on the NVSHL instrument, and no other documentation was needed. Quantitative data are used to help plan for the qualitative data follow-up (Creswell & Creswell, 2019). I integrated the data from both the quantitative and qualitative portions by comparing the quantitative result of low HL to participants' qualitative responses to the interview questions as to why the participants fall within the level of the HL measured.

Issues of Trustworthiness

When researchers speak of trustworthiness, it is in relation to whether the findings can be trusted to be accurate (Korstjens, & Moser, 2018). Trustworthiness is the

researchers' way to persuade themselves and readers that their research findings are worthy of attention (Nowell, et al., 2017).

The credibility, or external validity, of qualitative inquiry includes rigorous methods of fieldwork that yield high quality data, the credibility of the researcher, and the philosophical belief in the value of qualitative inquiry (Patton, 2015). Strategies I used to ensure the credibility of this study included the methods of data collection, coding, data collection triangulation, and data saturation.

Transferability, or external validity is the generalizability of an inquiry which is the degree to which the results of qualitative research can be transferred to other contexts or settings with other respondents (Nowell et al., 2017). This study's transferability was facilitated through thick descriptions (see Korstjens & Moser, 2018). I enhanced the transferability of this study by providing a thorough description of the research context and the assumptions fundamental to this research.

Dependability, or the qualitative counterpart to reliability, involves participants' evaluation of the findings, interpretations and recommendations of the research study such that all are supported by the data as received from the participants of the study (Korstjens & Moser, 2018). In order to achieve dependability in this study, I ensured the research process was logical, traceable, and clearly documented (see Nowell et al. 2017).

Confirmability, or the qualitative counterpart to objectivity, is concerned with establishing that data and interpretations of findings are clearly derived from the data (Nowell et al., 2017). Confirmability is the degree to which the findings of a research study could be confirmed by other researchers (Korstjens & Moser, 2018). I enhanced

the confirmability of this study by searching for and describing any negative instances that contradicted earlier findings.

Ethical Procedures

I obtained Walden University Institutional Review Board approval for this study before the recruitment of any study participants. The Institutional Review Board approval number for this study is 07-08-21-099600. This research involved human participants, and because there was no intervention with this study, but only asking participants for their thoughts, there was minimal or no adverse events. Participants voluntarily signed an informed consent to indicate their agreement to participate in the study after full disclosure of the purpose the study. I kept collected the data confidential by assigning each participant a code before the interview began. I also protected all collected data by storing them on encrypted drives that I only have access to. While the participants were informed and asked not to reveal any information that they did not wish to share, I also, made efforts to strike any such information from my notes or analysis if they inadvertently breached their own privacy. The data collection was conducted outside of my work environment, and as such, I had no supervisory or instructional role over the participants.

Summary

In this chapter, I outlined the methodology for this study. This chapter contains a discussion of the study design and an overview of the demographics of the population from which the participants were selected. I also, outlined the data collection and analysis procedures as well as the interview instrument. Finally, issues of trustworthiness

and ethical procedures were described to establish the safety confidentiality of those participating in the study.

The findings for both the quantitative and qualitative portion of this study will be presented in Chapter 4 as the results of the study.

Chapter 4: Results

The purpose of this study was to explore the perceptions of adults with HTN and low HL, as determined by the NVSHL measuring tool, about SM of their HTN; consequently, the primary research question was centered on addressing this population's perceptions. Specifically, the research question was: What are the perceptions of adults with HTN and low HL, as determined by the NVSHL measuring tool, about SM of their HTN?

In this chapter, I provide the setting of the study and demographics of the participants. The data collection procedures are also reviewed. The data analysis process is presented, including the specific codes, categories, and themes that emerged from the data. Evidence of trustworthiness, including credibility, transferability, dependability, and confirmability, of the findings are discussed. Finally, I present the results of the study to address the research question.

Setting

The setting for this study consisted of two selected faith-based organizations located in the western United States. I recruited participants (i.e., members of the faith-based organizations) through a printed flyer invitation that was posted on the organizations' notice boards and the weekly bulletin (only one of the organizations used these invitation methods) and announcement after each of the Sunday services during the data collection period.

Hypertensive adults who were interested in participating in the study contacted me after each of the Sunday services during the data collection period. After receiving a

description of the purpose and requirements of the study, the participants who were still interested in participating and met the inclusion criteria, signed the consent form, filled out a demographic form and were screened to determine the level of their HL using the NVSHL screening tool. Afterwards, I scheduled an interview time over the phone with them. All 15 interviews were conducted over the phone using an audio recording device and later transcribed verbatim into a Microsoft Word document.

I removed all identifiable information from the transcripts and gave each participant a code name (i.e., an alphabet and a number). The code names for participants from the first organization began with the letter A and a number, while the code names for participants from the second organization began with the letter B and a number. All audio data are stored in a secure hard drive and paper documents are stored in a locked file cabinet. Each participant was given a $10 gift card following the interview, which they collected from me subsequent Sundays after service.

Demographics

Participants included a wide range of hypertensive adults of different ages, ethnicities, and academic levels. There were 32 hypertensive adults who met the inclusion criteria and were screened for this study using the NVSHL screening tool. I recruited 20 participants from the first organization and 12 from the second organization. This group of participants was made up of 13 males and 19 females with 72% (23 participants) of the group having low HL and 28% (nine participants) having adequate HL (see Table 2). Their ages ranged from 38 years to 81 years old. The ethnic

backgrounds of the participants included the Latino, Filipino, and Asian American ethnic groups.

Data Collection

A total of 32 hypertensive adults who met the inclusion criteria were screened for this study using the NVSHL screening tool. 23 participants qualified and, thus were regarded as having low HL, while nine did not and were noted to have adequate HL. I notified the nine participants who had adequate HL over the phone that they would not continue with the study based on their adequate HL scores and thanked them for their time.

I interviewed 15 participants because two of the eligible participants decided not to continue with the study and six did not answer their phone calls and, therefore, were not included in the qualitative part of the study. Data were collected via phone interviews that lasted 30 to 45 minutes per participant from July 11th through September 11th, 2021. I did not provide individuals with the option of a face-to-face interview due to COVID-19 restrictions. The first part of the interview consisted of reviewing the purpose of the study and the elements of the consent form with the participants. Participants were reminded that their participation was voluntary and that they could stop the interview at any time. I also, emphasized that their privacy was and would be protected and their identity would never be revealed. Participants also were asked to agree to the interview being audio recorded. Immediately following each interview, I transcribed the participants' responses by the interview into a Microsoft Word document that was later coded. Following the coding, a memo was created, describing the interview and

expanding on ideas that emerged in the interview. The memos were then attached to the transcripts. All data were collected in the manner described in Chapter 3 with no variations.

Data Analysis

I used the manually transcribed interviews as the primary mode for the data collection. Six interview questions that highlighted the theoretical basis of this study and addressed the research question were asked. Data saturation was achieved when no new knowledge was learned after 10 interviews were completed. I transcribed the interviews in a consistent Word format. Raw data from each transcript were systematically reviewed as they related to the research question and key ideas and phrases from each transcript were compiled. The compiled data were reviewed to identify codes, themes and categories. I assessed each theme to determine a meaning in relationship to the research question. Once the codes, themes and categories were identified, I reviewed the transcripts again and quotes that supported the codes, themes, and categories were highlighted.

Evidence of Trustworthiness

I followed the research design and methods described in Chapter 3 throughout the data collection and analysis process. Only participants who met the inclusion criteria were allowed to take part in the interview process. Consistent questioning methods were used throughout all interviews.

Credibility is the researcher's ability to take into account all of the complexities of a research study and deal with patterns that are not easily explained (Ravitch & Carl,

2019). I assured credibility of the study by following the interview guide, keeping the interview focused on the research question, interviewing only participants who qualified as having low HL, coding, and conducting data triangulation. Data were triangulated by screening and interviewing different participants from more than one location. Credibility was also established from the fact that the results were somewhat surprising to me, demonstrating open-mindedness to the findings.

Transferability allows the audiences of the research (i.e., readers, other researchers, stakeholders, and participants) to transfer aspects of a study design and findings by taking into consideration different contextual factors instead of attempting to replicate the design and findings (Ravitch & Carl, 2019). I established transferability by identifying specific cases where a strategy or concept was used to improve SM behavior. Several patients indicated how important the use of a reminder or support group will be in fostering positive SM behavior. These examples can be used to determine what is possible in the development or improvement of SM skills.

Dependability entails that the researcher has a logical argument for how data are collected and that the data are consistent with the researcher's argument (Ravitch & Carl, 2019). I established dependability by interviewing all screened participants who met the inclusion criteria. Coding was conducted immediately following the interview transcription. A transcript was created by listening to each phrase of the audio recording and typing the participant's word-for-word response to each question. Transcribing the audio recording verbatim allowed for another appraisal of the exact words and phrases used by the participants.

Conformability takes into account the idea that qualitative researchers do not claim to be objective instead they seek to have confirmable data and relative neutrality and reasonable freedom from unacknowledged researcher biases (Ravitch & Carl, 2019 I established confirmability by becoming more self-aware of participants' views on HTN SM behaviors and resources for better SM of HTN. This was confirmed through the unexpected findings.

Results

I analyzed the collected data to answer the research question. A total of 32 participants were screened quantitatively for this research study using the NVSHL tool, and 72% (23 participants) of them were noted to have low HL while 28% (nine participants) were noted to have adequate HL (see Table 1).

Table 1

Characteristics of Participants

Characteristics	*n*	Low HL / %	*n*	Adequate HL / %	Number of Participants
Gender:					
Male	10	31%	3	9%	13
Female	13	41%	6	19%	19
Total literacy level		72%		28%	
Age:					
Under 40	0		1		1
40 – 65	19		7		26
Over 65	4		1		5
Academic level:					
High school graduate	10		3		13
College graduate	8		1		9
Graduate School	3		3		6
Master's degree	0		2		2
Unidentified academic level	2		0		2
Race/Ethnicity:					
Filipinos	3		0		3
Latinos	8		19		27
Asians	2		0		2

The qualitative research interview question focused on the knowledge of patients about HTN pre-and post-diagnosis, what they do to manage their condition, and the difficulties they encounter in managing their condition as well as their experiences of being in charge of their health and the resources that would help to improve their SM behaviors. Themes and categories were supported by comments from participants. The responses of most of the participant highlighted five themes: recognize what is needed but finds SM requirements difficult to follow, do not understand the meanings of the requirements of SM, stresses related to work, family life and the pandemic have affected ability to self-manage, understands and follows requirements of SM, and things that would help in SM. The codes, themes, and categories for this research question is

Recognize What is Needed but Finds SM Requirements Difficult to Follow

The categories related to this theme include knowledge needed to improve diet understanding and application, and education and support for improving exercise and diet. Virtually every participant made a reference to taking their prescribed medications, eating the right foods, exercising, watching their weight and reducing stress as ways of managing their BP. However, some struggled with having to deal with remembering to and taking their medication daily, sticking to a the right diet, exercising regularly, and time and stress management. For example, according to Participant A1,

> I think the most difficult part is eating the right foods. I tried the non-salt cooking. I didn't like the way it tastes. I couldn't not take that taste. I even tried having more vegetables, lean meat, chicken and other stuff. It's not easy. As I have gotten older, it is hard to exercise, you know, with the kids, much harder. I try to exercise more, but it is very difficult with the kind of job that I do.

Participant A3 stated that "I think that the hardest part is trying to manage it, where you go back to get checked up from the doctors and them telling you your high BP is ok, not high or low. Participant B4 shared, "like the medicine, you have to take it always. Like you have to remember to take it every day, every single day."

Do Not Understand the Meanings of the Requirements of SM

The category related to this theme include knowledge and support needed to improve overall understanding of diet and medication adherence. This theme is validated by the following responses. Participant A1 responded, "I don't do it all the time [check BP] or consistently kept a record of the readings." Participant A4 stated, she prescribed a

medication then but I didn't want to take it. I didn't want to keep taking it. Participant B5 shared that

> If I eat a lot of vegetables, you know, my BP will go down or steak without salt. When you try to eat the same food, day after day it is like your body won't tolerate it. Let's say you started eating vegetables, after a while your body rejects it and does not want vegetables anymore.

Stresses Related to Work, Family Life and The Pandemic Have Affected Ability to Self-Manage

The category related to the theme of stresses related to work, family life, and the pandemic have affected ability to self-manage is external forces and is supported by several of the participants perspectives. Participant A1 shared that "recently because of the virus, I haven't been calling my doctor very often for BP." Participant A2 reported, "I know I cannot be under stress, eat too much. I know that emotional stress can cause it to go up." Participant A3 responded that they "try not to worry about things you cannot control." Participant A4 agreed stating that they "Try to stay calm. Try not to be upset so much." Participant A5 shared they are "staying away from liquor and stress, I wear my mask. I got my shot already and I try to stay away from stress as much as possible."A8 responded that "I understand, high BP comes from a lot of stress at times… I try not to be stressful."

Understands and Follows Requirements of SM

The categories related to the theme of understands and follows requirements of SM include positive SM and knowledge of positive SM." This theme was substantiated by the perspectives of majority of the participants. Participant A4 stated,

> I went to PT (physical therapy) after I had the stroke, then it was at my request because my doctor didn't think I really needed it and when I went, I found it very helpful and encouraging and I did my exercises as I was told and instructed to and I had a very good experience with that.

Participant B1 reported,

> I am conscious of not eating salty foods and also very careful on ice cream, butter and all those fatty foods." "You have to be 100% in charge otherwise there is nobody else that will help you. I motivate myself because if I want to live longer and not have a stroke, I have to be conscious and reliant on myself only", I have my blood work at least four times in a year because of my condition. So, I keep up with that.

Participant A4 shared that "I know I have to take care of myself. I don't see it as a burden." Participant A5 responded,

> "I like my tacos and all that but I try to eat more vegetables. I like my meat but more fish is better."

Participant B5 stated,

> It is a big responsibility and I have to do what needs to be done. I usually get pamphlets from my doctor. And I usually use like everyone else nowadays, I google

> it, when I have questions but I don't really look up too much since I go to the BP clinic and they answer my questions.

Finally, Participant B4 shared, **"**I don't have any issues with controlling my high BP, just as long as I take the medicine that is it. Otherwise, I don't have any issue or problem."

Things That Would Help in SM

Finally, SM information needed and recommendations for improving SM are the categories related to the theme things that would help in self-management. This theme is supported by several of the participants responses. Participant B3 stated that "I think there should be cooking classes to show people how to change their way of cooking so they can manage it more better and certain types of food to cook with." Participant B1 responded "A constant reminder of foods that are not good for HTN patients, people suffering from high BP. Just a reminder, once in a while you know." Participant B5 shared that "what resources probably more knowledge about what exactly affects BP. One good resource on this is the internet." Participant A4 shared that,

> Patients are responsible for their health; they have to learn as much as they can on their condition and try to best take care of their health and eating habits and all kinds of things and when they talk to the doctors sometimes doctors recommend tests that are helpful.

Finally, Participant A5 stated "I think exercise. Eating the right foods you know, staying away from liquor and stress."

Summary

In Chapter 4 the results of this study were presented. The results were presented by the research question. To answer the research question, participants were asked about their knowledge of HTN pre-and-post diagnosis, what they do to manage their HTN, the difficulties they encounter in managing their condition and the resources that would help improve their SM behaviors. The themes associated with the research question include recognize what is needed but finds SM requirements difficult to follow, do not understand the meanings of the requirements of SM, stresses related to work, family life and the pandemic have affected ability to self-manage, understands and follows requirements of SM, and things that would help in SM. The discussion of the results described in this chapter, recommendations, and conclusions will be presented in Chapter 5.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this research study was to explore the perceptions of adults with HTN and low HL, as determined by the NVSHL measuring tool about SM of their HTN. This study addressed the knowledge gap in the literature regarding factors related to the perceptions of adults with HTN and low HL about the SM of their HTN. The findings from this study indicated that a majority of adults with HTN and low HL recognize what is needed but find SM requirements difficult to follow because they do not understand the meanings of the SM requirements. The responses from a majority of these adults with HTN and low HL also indicated that stresses related to work, family life and the COVID-19 pandemic have affected their ability to self-manage. Nevertheless, several of them understand and follow SM requirements and things that would help in SM such as daily blood pressure checks, taking BP medications as prescribed, eating the right foods, exercise, staying away from alcohol, stress management, and regular medical check-ups.

Interpretation of the Findings

The major findings of this study showed that some of the adults with HTN and low HL recognize what is needed for proper self-care but finds SM requirements difficult to follow. Most of participants recognized that medication, exercise, and the right diet is important to their BP management. However, some participants did not consistently adhere to the SM requirements because they do not have the time to focus on eating the right diet, taking their medications correctly and making time for exercise. Another major finding of this study showed that some of the participants do not understand the

meanings of the SM requirements because they did not understand the importance of regular BP checks, and safe and unsafe BP ranges.

The findings of this study partially supported previous research in that some of the participants in this study were unable to make informed health decisions or practiced positive SM behaviors because they find SM requirements difficult to follow or do not understand the meanings of the SM requirements. These findings are supported by those of Meherali et al. (2020) who showed low HL is associated with worse health decisions and outcomes, insufficient knowledge about health, and poor access, and use of health services. Individuals with low HL are more likely to have poorer health outcomes, lower medication adherence, increased hospitalization, higher mortality, and higher health care costs, associated with their difficulty in comprehending health information, following medical instructions, and performing self-care tasks (Huang et al. 2018). Compared to individuals with adequate HL, individuals with low HL are perceived as people who may not understand fully what they were told during consultations with their healthcare providers (Javadzade et al. 2018). People with low HL are perceived to have difficulties communicating effectively with health care providers (Nguyen et al. 2020). Individuals with low HL are also described as having worse physical and mental health status and a higher mortality rate than those with adequate HL (Nguyen et al. 2020). Low HL is associated with inadequate control of chronic health conditions like HTN (Alkhaldi et al., 2018), worse self-care behaviors, worse HTN-related knowledge, lower ability to identify HTN medications, and reduced adherence to medications and refills (Larki et al., 2018).

Conversely, a majority of the participants in the current study recognized that medication, exercise, and the right diet is important to their BP management, were able to make informed health decisions and actively participated in their own care stemming from their understanding and perceptions of positive SM behaviors, compliance with their medication regimen and other self-care tasks even though they did have low HL as measured by the NVSHL. Therefore, the findings of the current study do not fully support previous study findings on the effects of low HL and SM of HTN.

Limitations

This study was based only on adults with HTN who were shown to have low HL, and as such, the findings may not be transferable to individuals with low HL who have other health conditions. Another limitation of this study was the use of sample of participants from a particular locality which may make study results non-transferable to other localities.

Recommendations

In this study, I found that hypertensive adults with low HL recognize what is needed but find SM requirements difficult to follow and do not understand the meanings of SM requirements. A majority of the participants also indicated that stresses related to work, family life and the COVID-19 pandemic have affected their ability to self-manage. However, several of them understand and follow SM requirements and things that would help in SM such as daily BP checks, taking BP medications as prescribed, eating the right foods, exercise, abstaining from alcohol, stress management, and regular medical check-ups.

In future research, the NVSHL screening tool should be used along with another HL screening tool to determine individuals' HL levels. In future research, I would also recommend studying different HL skills like cognitive skills (i.e., reading, writing, listening, speaking, and numeracy), critical analysis, and interpersonal skills such as communication and interaction abilities (see Health Literacy n.d.) should be studied to determine which is most associated with low HL. Furthermore, I would recommend that if participants with low HL perceive they are able to manage their own care, a method should be used to quantitatively document their perceptions.

Implications

This study has shown that in this group of participants with HTN, although some of them recognize what is needed but find SM requirements difficult to follow, and do not understand the meanings of SM requirements, several of them understand and follow SM requirements and things that would help in SM (i.e., daily BP checks, taking BP medications as prescribed, eating the right foods, regular exercise, abstaining from alcohol, stress management, and regular medical check-up). Hence, low HL does not pose a major problem given that they perceive that being in good health and control of their BP depends on their full participation in their own care through positive SM behaviors. With these findings in mind, health care leadership and providers should focus more on providing educational resources to all their patients to help equip them with the knowledge base needed to embrace healthy life style behaviors that would promote and ensure positive health outcomes in the long run. The findings of this study

may encourage health care providers to assess the needs of their patients as they relate to their levels of HL.

Conclusions

In this research study, I explored the perceptions of hypertensive adults with low HL about SM of their HTN. Participants in this study were found to perceive that they needed to be actively involved in the SM of their HTN to be in good health, which is not consistent with the findings of other studies. These findings illustrate the need to identify and provide the HL skill needs of patients at different HL levels. Determining patients' levels of HL may lead to the development of the knowledge and skills needed for them to manage acute or chronic health conditions such as HTN.

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Appendix A: Interview Guide

Interview location: …….

Interview method: Face to face: ……. Phone: ……

Date/time: ……Am/pm

Participant's number: ……

RQ1. What prior knowledge of hypertension did you have; before you were diagnosed?

RQ2. Tell me more about high blood pressure after diagnosis.

RQ3. Tell me about what you do to manage your condition.

RQ4. What is the most difficult part of managing your high blood pressure?

RQ4b. Give me some examples of the difficulties you encounter in managing your high blood pressure?

RQ5. What is your experience of being in charge of your condition?

RQ6. What support or resources do you think would make managing your condition go more smoothly?

RQ7. Is there any other information you would like to share?

Additional notes:

Appendix B: The Newest Vital Sign Screening Tool

Score Sheet for The Newest Vital Sign instrument Questions and Answers

READ FOR THE SUBJECT:
This information is on the back of an ice cream pot.

1. If you eat all the ice cream, how many calories will you consume?
Answer: 1000 is the only correct answer.

2. If you could eat 60 grams of carbohydrate during a meal, how much ice cream could you eat?
Answer: Any of the following answers is correct: one glass, four balls (or any amount up to one glass or four balls) or half a pot.
Note: If the patient answers "two servings", ask the following question: "So, what would be the amount of ice cream that you would put inside a glass?"

3. Imagine that you consume a total of 42 g of saturated fat per day. Among the foods you consume in the day, you eat one serving of ice cream. If you stopped eating the ice cream, how many grams of saturated fat would you consume per day?
Answer: 33 is the only correct answer.

4. Now imagine that you consume 2,500 calories per day. What would be the percentage of calories you would be consuming while eating one serving of ice cream?
Answer: 10% is the only correct answer.

READ FOR THE SUBJECT:
Imagine that you are allergic to penicillin, peanut, latex glove and bee sting.

5. Would it be safe for you to eat this ice cream?
Answer: No.

6. (Ask only if the patient answered "no" in question 5): Why not?
Answer: Because it contains peanut oil.

Number of correct answers:

Correct answer?	
Yes	**No**

Interpretation
Score 0-2 suggests high probability (50% or more) of limited level of literacy.
Score 3-4 indicates the possibility of limited level of literacy.
Score 5-6 almost always indicates adequate level of literacy.

The Newest Vital Sign Nutritional Label

Questionnaire

1. If you eat the entire container, how many calories will you eat?

   Answer ,,

2. If you are allowed to eat 60 g of carbohydrates as a snack, how much ice cream could you have?

   Answer ,,,

3. Your doctor advises you to reduce the amount of saturated fat in your diet. You usually have 42 g of saturated fat each day, which includes 1 serving of ice cream. If you stop eating ice cream, how many grams of saturated fat would you be consuming each day?

   Answer ,,

4. If you usually eat 2500 calories in a day, what percentage of your daily value of calories will you be eating if you eat one serving?

   Answer ,,

   Pretend that you are allergic to the following substances: Penicillin, peanuts, latex gloves, and bee stings.

5. Is it safe for you to eat this ice cream?

   Answer ,,

6. If no, why not?

   Answer ,,,

Appendix C: Demographic Form

Date ……

Please state the following

1. Participant's Number ……
2. Age ……
3. Gender: Male: ……. Female: ……
4. Ethnicity…….....
5. Phone number: …….
6. Email address: …….
7. Highest level of education attained …….
8. When were you diagnosed with hypertension? ……
9. Do you take high blood pressure medication (s)? Yes…… No …….

Please use the information in the nutritional fact label (next page) to answer the questions below

Appendix D: Recruitment Flyer

HEALTH LITERACY

INVITATION

TO A RESEARCH STUDY

Perceptions of Hypertensive Adults with Low Health Literacy about Self-management of Hypertension

Looking for adults that have been diagnosed with hypertension for at least two years.

WHAT IS EXPECTED OF YOU?

An interview with the researcher discussing your views about the self - management of hypertension, lasting 30 – 45 minutes.

WHAT IS EXPECTED OF THE RESEARCHER?

Your identity and privacy will be maintained at all times.

YOU WILL RECEIVE A $10 GIFT CARD FOR YOUR PARTICIPATION IN THIS STUDY

If you are interested in this study, contact the researcher @

818-310-0157

Appendix E: Codes, Categories and Themes for Research Question

Codes	Categories	Themes	Examples to use in narrative
Lack of time is the reason for wrong diet	Knowledge needed to improve diet understanding and application. and	Recognize what is needed but finds self-management requirements difficult to follow	"I need to focus more attention on my diet in terms of what to eat and what not to eat but I haven't put a lot of time into it only because it's time. Time is my biggest enemy here." A3 "I am always used to workout, taking my medications, being healthy, this and that….. but it is very difficult with the kind of job that I do, I mean what I do, to be able to do all that." A3
Diet is difficult to follow	Education and support for improving exercise and diet."		I think the most difficult part is eating the right foods,". "I tried the non-salt cooking. I didn't like the way it tastes. I couldn't not take that taste. I even tried having more vegetables, lean meat, chicken and other stuff. It's not easy." A1 "Sometimes, I do eat fast foods. Someone brings Kentucky fried chicken and you know it's hard to say no." A4 "The difficulty is that when you are in a

			company of friends and you go out, it is kind of hard because you cheat on foods you are not supposed to eat." B1 "Mainly the intake of food." A3 "The diet and exercise, like you said the label reading and stuff, it's tough**."** B2 "I think there should be cooking classes to show people how to change their way of cooking so they can manage it more better and certain types of food to cook with."B3
Exercise is difficult	Education and support for improving exercise and diet.		"I used to be able to walk around, do chores, go to the stores, exercises but not now." "I even tried having more vegetables, lean meat, chicken and other stuff. It's not easy." A1, "as I have gotten older, it is hard to exercise, you know, with the kids, much harder." "I try to exercise more, but it is very difficult with the kind of job that I do." A3
Too many rules and regulations			"It's very vague. I understand it is important to follow the rules and regulations to control it." A1 "the diet and exercise, like you said the label reading and stuff, it's

			tough**.** It gets to be a bother sometimes, you know, you have to do it to stay healthy." B2
HTN management is difficult	Education and support for improving exercise and diet.	Recognize what is needed but finds self-management requirements difficult to follow	"I think that the hardest part is trying to manage it, where you go back to get checked up from the doctors and them telling you your high BP is ok, not high or low."B3 "like the medicine, you have to take it always. Like you have to remember to take it every day, every single day." B4 Sticking to my diet and also the medication." B5
Need for encouragement	Self-management information needed	Things that would help in self-management	"I think there should be cooking classes to show people how to change their way of cooking so they can manage it more better and certain types of food to cook with." B3 I can contact my doctor any time and tell him to have the nurse call me every once a week and to check on me to see how it is going with me." A1
Need for constant reminders	Self-management information needed		"I can contact my doctor any time and tell him to have the nurse call me every once a week and to check on me to see how it is going with me." A1

			"A constant reminder of foods that are not good for HTN patients, people suffering from high BP. Just a reminder, once in a while you know" B1
Resources would help me self-manage	Self-management information needed		"what resources probably more knowledge about what exactly affects BP. One good resource on this is the internet."B5 The resources would be the medication. if let 's say you have a high BP, I think you should go see the doctor and take whatever medicine is prescribed with you and maybe do some diet"B4, **"**I think the blood pressure monitor for starters and I need to focus more attention on my diet in terms of what to eat and what not to eat"A3 "patients are responsible for their health, they have to learn as much as they can on their condition and try to best take care of their health and eating habits and all kinds of things and when they talk to the doctors sometimes doctors recommend tests that are helpful." A4

			"I think exercise. Eating the right foods you know, staying away from liquor and stress." A5 "I usually get pamphlets from my doctor. And I usually use like everyone else nowadays, I google it, when I have questions but I don't really look up too much since I go to the BP clinic and they answer my questions." B2
Use of the internet for information	Recommendations for improving self-management"	Things that would help in self-management	"what resources probably more knowledge about what exactly affects BP. One good resource on this is the internet."B5 "I usually get pamphlets from my doctor. And I usually use like everyone else nowadays, I google it, when I have questions but I don't really look up too much since I go to the BP clinic and they answer my questions." B2
Blood pressure checks not done	Knowledge needed to improve overall understanding of diet and medication adherence	Do not understand the meanings of the requirements of self -management.	"I don't do it all the time or consistently kept a record of the readings." A1 "The resources would be the medication. That is, it. And plus, every three months I have to check with the doctor to see how my BP is" B4

Awareness of resources but does not always use them	Knowledge and supported needed		"I don't do it all the time or consistently kept a record of the readings." A1 "She prescribed a medication then but I didn't want to take it. I didn't want to keep taking it."
Lack of understanding	Knowledge needed to improve overall understanding of diet and medication adherence		I guess I have to talk to the doctor or whoever about it." "But I can't tell when it is up, even if I have not taken my medication at that time because I do not know how high it is but I do know it's up" A1 I really eat a pretty regular diet. A4, "I eat the right foods. I eat a lot of blackberries and blueberries, fiber one." A5 It just boils down to what food not to eat, more roughage, foods that are rich in vegetables." B1 "She prescribed a medication then but I didn't want to take it. I didn't want to keep taking it." A4 "I believe from being Hispanic high BP, I believe runs in Hispanic."B3 "If I eat a lot of vegetables, you know, my BP will go down or stake without salt." "when you try to eat the same food, day after day it is like your body won't tolerate it. Let's

			say you started eating vegetables, after a while your body rejects it and does not want vegetables anymore" B5
			"
The pandemic affected my treatment	Eternal forces	Stresses related to work, family life and the pandemic have affected ability to self-manage.	"I got my shot already and I try to stay away from stress as much as possible." A5 "Recently because of the virus I haven't been calling my doctor very often for BP." A1
Stress affects my HTN	External forces		"I think exercise. Eating the right foods you know, staying away from liquor and stress."A5, "I got my shot already and I try to stay away from stress as much as possible."A5 "I know I cannot be under stress, eat too much. I know that emotional stress can cause it to go up." A2 "try not to worry about things you cannot control, A3, "Try to stay calm. Try not to be upset so much." A4, "staying away from liquor and stress, I wear my mask. I got my shot already and I try to stay away from stress as much as possible." A5

			"I understand, high BP comes from a lot of stress at times… I try not to be stressful." A8
Exercise helps keep me healthy	Self-management information needed	Understands and follows requirements of self-management	"I went to PT (physical therapy) after I had the stroke, then it was at my request because my doctor didn't think I really needed it and when I went, I found it very helpful and encouraging and I did my exercises as I was told and instructed to and I had a very good experience with that." A4 They tell me do exercise and I go to the gym. I go swimming and all that. I try to stay in shape. I wear my mask. I got my shot already and I try to stay away from stress as much as possible."A5, I walk every day for about 35 to 40 minutes. I am aware it will level it down. It will keep me healthy." A2, "I try to exercise more," A3, "I did my exercises as I was told and instructed to and I had a very good experience with that." A4 "I go to the gym, I walk every morning at 12 o clock. I go to the gym Monday,

			Wednesday and Friday.” A5 “I exercise. I go to the gym.” A8
Eating affects my HTN	Recommendations for improving self-management”	Understands and follows requirements of self-management	“I eat a pretty good diet. I used to be like 162 pounds but now I am anywhere between 155 and 158, 159. So, I lost a couple of pounds.” A4, “I am conscious of not eating salty foods and also very careful on ice cream, butter and all those fatty foods.” B1 “staying away from salt. “I know salt contributes to high BP.” A8 “I know that salt increases BP, if I eat a lot of salty, fatty foods, I can expect my BP to go up.” B5 “I also know eating can make the BP go up, though I am very conservative with what and how I eat.” A2
			“
Knowledge about HTN prior diagnosis	Self-management information needed	Understands and follows requirements of self-management	“before I got diagnosed, I was having like headache and I did not know if it was coming from off my eye glasses. So, I got myself checked by my primary care” B1 “Pretty much. I knew about HTN before I was diagnosed because

			my parents had high BP.” B1, “what prior knowledge? not really that much honestly. But after a long time, I just knew some of the danger of high BP.” B2 “Before I was diagnosed when I was in my teen, I always use to have low BP but lately as I age that is when the BP started to go up”, B4 “Not that much.” B5 “I had knowledge of HTN before I was diagnosed. My mother had HTN”. A2 “Very little, “I just knew that my mother had it many years ago.” A3
Positive self-management behaviors	Recommendations for improving self-management”	Understands and follows requirements of self-management	“it is a big responsibility and I have to do what needs to be done.” B2 “I am taking medicine. The doctor gave me medicine to put down my BP” B4 “the other way I manage my BP is by taking BP medications.” B5 “I know I have to take care of myself. I don’t see it as a burden.” A4 “You have to be 100% in charge otherwise there is nobody else that will help you. I

			motivate myself because if I want to live longer and not have a stroke, I have to be conscious and reliant on myself only. ; I have my blood work at least four times in a year because of my condition. So, I keep up with that" B1 "I need to focus more attention on my diet in terms of what to eat and what not to eat." A3, "I don't eat a lot of any candy. I cut down my sweets a lot. I don't eat a lot of red meat" A4 "I like my tacos and all that but I try to eat more vegetables. I like my meat but more fish is better." A5 "I take my medication. I also try to watch what I eat and I walk." B2 "I am taking medicine." B4 "the other way I manage my BP is by taking BP medications. "B5 "I get a physical every year. I am always used to workout, taking my medications, being healthy."A3 "I eat a pretty good diet. I used to be like 162 pounds but now I am anywhere between 155 and 158, 159. So, I

			lost a couple of pounds.” A4 “I take my medications every day, I don’t skip.
Awareness of right diet	Recommendations for improving self-management”	Understands and follows requirements of self-management	“I need to focus more attention on my diet in terms of what to eat and what not to eat.” A3, “I don’t eat a lot of any candy. I cut down my sweets a lot. I don’t eat a lot of red meat” A4, “I like my tacos and all that but I try to eat more vegetables. I like my meat but more fish is better.” A5 It just boils down to what food not to eat, more roughage, foods that are rich in vegetables. I like my meat but more fish is better.” B1
Eating the right diet	Self-management information needed		“I think there should be cooking classes to show people how to change their way of cooking so they can manage it more better and certain types of food to cook with.”B3 “A constant reminder of foods that are not good for HTN patients, people suffering from high BP. Just a reminder, once in a while you know” B1 “I always try to remind myself that you need to eat, you need to drink, not having stress.” B3

			I really eat a pretty regular diet. A4, “I eat the right foods. I eat a lot of blackberries and blueberries, fiber one. I like my tacos and all that but I try to eat more vegetables. A5
Selfcare Responsibility	Self-management information needed		“it is a big responsibility and I have to do what needs to be done.” B2 “I am taking medicine. The doctor gave me medicine to put down my BP” B4 “the other way I manage my BP is by taking BP medications.” B5 “It’s good that I have control, if I don’t have control, I can’t make it with managing my BP. I can’t help myself.”A2 “when I am in charge my blood pressure goes down and when I don’t pay attention it goes up.”B5
Use of available resources	Recommendations for improving self-management	Understands and follows requirements of self-management	“I went to PT (physical therapy) after I had the stroke, then it was at my request because my doctor didn’t think I really needed it and when I went, I found it very helpful and encouraging and I did my exercises as I was told and instructed to and I had a very good

			experience with that.”A4 “before I got diagnosed, I was having like headache and I did not know if it was coming from off my eye glasses. So, I got myself checked by my primary care” B1, “I usually get pamphlets from my doctor. And I usually use like everyone else nowadays, I google it, when I have questions but I don’t really look up too much since I go to the BP clinic and they answer my questions.” B2 The resources would be the medication. And plus, every three months I have to check with the doctor to see how my BP is. That is, it.” B4
Awareness of needed resources	Recommendations for improving self-management		“I have all the support. I can see my doctor whenever I need and call them. When I go in for my checkup, they are very thorough. They check me very well. If I need to see a specialist or whatever, my doctor doesn’t hesitate. So, I am always in good care” A4 “I can contact my doctor any time and tell him to have the nurse

			call me every once a week and to check on me to see how it is going with me." A1 "patients are responsible for their health, they have to learn as much as they can on their condition and try to best take care of their health and eating habits and all kinds of things and when they talk to the doctors sometimes doctors recommend tests that are helpful."A4
Medication compliance (Knows it is important to take medications)	Recommendations for improving self-management	Understands and follows requirements of self-management	**"**I don't have any issues with controlling my high BP, just as long as I take the medicine that is it. Otherwise, I don't have any issue or problem." B4 "it is a big responsibility and I have to do what needs to be done." B2 "I take my medications every day, I don't skip."A4 "I use my medicine, you know. My doctor says keep doing that you know. So, it's working, you know. It's keeping me down." A5 "I take my prescription medication on a regular bases, I try not to skip any medication." B1

			“I am on medication. I am also a diabetic. So, I take my medication. right now it is under control. I am sure it is because of the medicine and exercise.”B2 “I am taking medicine. The doctor gave me medicine to put down my BP” B4 “the other way I manage my BP is by taking BP medications.” B5