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Staff Hypertension Education Program for Vulnerable Populations in a Primary Care Setting

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Abstract

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MS, Mount Saint Mary College, 2012

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Project Submitted in Partial Fulfillment

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Abstract

For health care practitioners to effectively manage hypertension (HTN) patients and their related long- and short-term consequences, they must first identify the underlying cause of the disease. When patient interventions are not regularly implemented by clinicians, the likelihood of complications from HTN increases. A gap in staff knowledge on managing patients with HTN was identified in an outpatient clinic in the midwestern United States. A staff education program for health care providers to close the knowledge gap was developed based on the most recent Veterans Affairs/Department of Defense Clinical Practice Guidelines for the management of HTN. The aim of this project was to explore the impact of an evidence-based staff education program on increasing clinical personnel's awareness of the management of HTN. The health promotion model played a critical role in guiding the project's development and implementation. Three expert stakeholders endorsed the project, agreeing that the educational program and content, when applied to clinical practice, would increase staff understanding of the management and diagnosis of HTN. Ten clinical staff members participated in the education program, first completing a pretest questionnaire and then viewing a PowerPoint presentation outlining the educational program's content. The participants completed posttest questionnaires to assess their knowledge following the PowerPoint presentation. Posttest results suggested that staff knowledge grew due to a learning gain from the program's original baseline. The project has the potential for positive social change when evidence from the staff education is translated into practice, resulting in improved patient management for the treatment of HTN.

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Section 1: Nature of the Project

Hypertension (HTN), also known as high or raised blood pressure, is a condition in which the blood vessels have persistently raised pressure (Zhang & Moran, 2017). HTN shares a disproportionate burden for risk factors for cardiovascular disease (CVD), surpassing smoking, increased body mass index, and diabetes (Ferdinand & Nasser, 2013). CVD has many modifiable risk factors, with HTN playing an integral role as a significant contributor to death and disability worldwide as compared to other modifiable risk factors (Nasser & Ferdinand, 2018). The Centers for Disease Control and Prevention (2016) reported that HTN is one of the dominant underlying conditions that may cause CVD. Researchers found that the prevalence of HTN has persisted through the decades in the United States despite awareness and treatment modalities (Zhang & Moran, 2017). Blood pressure control is proven to decrease CVD's adverse effects, yet high-quality interventions to address CVD reduction are minimal (Walton-Moss et al., 2014). Evidence-based guidelines exist and are readily accessible through various platforms; however, pharmacological intervention is not always implemented for specific populations (Milman et al., 2018).

In a primary care setting in the midwestern region of the United States, the inadequate management of HTN in a vulnerable population continues despite well-established treatment modalities. Although there are many definitions of vulnerable populations, the literature has often defined vulnerability as people from rural settings, who are predominantly poor, and/or who comprise various racial or ethnic minorities predisposed to harm (Walton-Moss et al., 2014). Research has shown that cardiovascular

health has improved for many Americans, and there are health care disparities in vulnerable populations (Walton-Moss et al., 2014). Clinical providers at a clinic in the Midwestern United States have cited "a genetic predisposition for the condition" as a suitable reason for failure to initiate treatment. This procedural knowledge gap can lead to inconsistent treatment plans and poor cardiovascular outcomes for a vulnerable population. Numerous reasons contribute to delay in treatment in a vulnerable population, such as life experiences, cultural norms, and providers' perceptions (Guy-Walls & Long, 2017). Individual experience and fear can also be barriers to seeking treatment for underlying conditions that lead to CVD. Walter (2017) stated that current educational programs teach nurses that race is a risk factor for numerous diseases; however, this deficit in education contributes to a knowledge gap leading to poor outcomes. Developing and implementing an evidence-based HTN educational program that focuses on primary care providers' knowledge may improve HTN management in a vulnerable population, thus improving their cardiovascular outcomes.

Problem Statement

The project setting was an outpatient clinic located in the Midwestern United States. The clinic provides primary care services to about 15 000 patients, and about 3,000 patients have, at one point, been diagnosed with HTN. One provider challenge in the clinic was that providers are not adequately aware of clinical practice guidelines for diagnosing and managing patients with HTN. Poor HTN control for patients in the clinic may be multifactorial: It could be associated with poor medication management, provider inertia, or lack of nursing staff supports to include nursing interventions. Other challenges

that could be applicable were appropriate follow up with 24-hour blood pressure checks and referrals to the wellness center, dietitian, and/or pharmacist to help patients manage their condition, make lifestyle modifications, and comply with medication. There are well-established approaches to address HTN commencing with lifestyle modifications alongside a combination of pharmaceutics, yet treatment for patients remains inferior (Herbert et al., 2012).

It is perplexing that HTN, a known modifiable risk factor for CVD, even when treated, remains uncontrolled in vulnerable populations because providers are not consistently implementing appropriate interventions for HTN management. The Department of Veterans Affairs (VA) and Department of Defense (DOD) has crucial guidance for the treatment and diagnosis of HTN. *The Diagnosis and Management of Hypertension (HTN) in Primary Care* is the most updated clinical practice guidelines (CPG) that clinicians rely on as a source of evidence (Tschanz et al., 2020). The VA/DOD CPG recommended blood pressure goals of less than 150 mm Hg with an added benefit to lowering systolic blood pressure for patients 60 years and older and less than 130 mm Hg for all patients with Type 2 diabetes. Lack of adequate knowledge about the VA/DOD CPG was observed with the staff in the project site primary care clinic.

Purpose Statement

The project's main objective was to educate clinical staff in an outpatient clinic in the Midwestern United States on the fundamental principles of the 2020 VA/DOD CPG on the management of HTN in the primary care setting. The project goal was to improve patient outcomes through staff education that emphasizes compliance with the updated

VA/DOD CPGs for the management of HTN. The expected results were enhanced staff knowledge to support lifestyle modifications and medication compliance to improve CVD outcomes.

The guiding practice-focused question was: Will an evidence-based HTN educational program improve providers' knowledge regarding HTN management? Identifying a knowledge gap to incorporate staff education to clinicians could enhance provider practice to improve patient outcomes. The failure of providers to adequately manage HTN contributes to the increased risk of CVD; however, the nursing profession's charge to alleviate this burden must be addressed to ensure that the "caring profession" is congruent to long-held values and social justice through increased knowledge.

Nature of the Doctoral Project

I developed an education program for clinical providers in a primary care clinic on the updated 2020 VA/DOD CPGs for the management of HTN. This evidence-based guideline provided information on measuring blood pressure, the acceptable blood pressure limits, the proper mechanism to obtain blood pressure at home and a clinic, lifestyle modification, and medication compliance. The participants consisted of 10 clinical providers, including nurse practitioners, physician assistants, medical doctors, registered nurses, and licensed practical nurses. The program was guided by evidence-based guidelines outlined by the VA/DOD CPGs and information from a literature review.

To locate literature for the review, I performed a search using the Walden Library databases, including ProQuest, Cochrane Library, PubMed, Elton Stevens Company, and

Cumulative Index to Nursing and Allied Health Literature. The following keyword search terms and phrases were used: *hypertension, vulnerable population and the treatment of hypertension, hypertension management, evidence-based hypertension management, hypertension education, staff education on hypertension, hypertension treatment guidelines, hypertension control, staff knowledge to increase hypertension, hypertension self-care,* and *hypertension control* as well as amalgamations of these terms.

The goal of the project was to develop a staff education program for clinical providers at the project site midwestern clinic to quickly recognize and utilize a holistic approach to manage HTN as outlined in the VA/DOD CPGs for the management of HTN.

Using the VA/DOD CPGs as the basis of the staff education session, I educated the staff on the health and goals of HTN management, such as the screening measurement techniques, monitoring, diagnosis, and general approaches to HTN management. In addition to educating staff about pharmacological treatments, it was also important to teach them about nonpharmacologic treatment associated with HTN, such as weight reduction, exercise, physical activity, and dietary modifications. The Dietary Approaches to Stop Hypertension (DASH) were explained to fulfill the dietary modification aspect of the project and the VA/DOD CPGs annotated a Mediterranean Diet as an alternative to the DASH diet for a patient with additional risk factors, such as dyslipidemia (Tschanz et al., 2020). The DASH diet is known to reduce systolic blood pressure and diastolic blood pressure in hypertensive and normotensive adults with an additive effect when used with sodium restriction (Filippou et al., 2020). As indicated in

the VA/DOD CPGs, the DASH diet is an essential component of the dietary modifications that play a pivotal role in reducing HTN.

The development of the education program for clinical providers was integral to translating evidence-based practice into clinical practice for improved patient outcomes. According to Tavkolvy Sany et al. (2020), patient education can lead to better blood pressure control and prompt the patient to regularly engage in clinical care when interventions are suboptimal.

I gave the clinical staff a pretest questionnaire assessing their knowledge of the VA/DOD CPGs on management of HTN before the educational program. Once the educational program was completed, a posttest questionnaire was given to the participants to ascertain any knowledge changes. I expected the project to improve the staff's knowledge of HTN self-management to aid patients in leading healthier lives.

Significance of the Project

The staff in the project site clinic required the best evidence and more education about the compliance related to the VA/DOD CPGs for the treatment goals and approaches to HTN management for all patients. There are numerous guidelines that health care providers could utilize; however, the 2020 VA/DOD CPGs provide the most up-to-date recommendations. Providing clinicians with the best evidence for HTN treatment and control in the primary care setting is essential for reducing the risk associated with CVD (Zhang & Moran, 2017). According to Tavakoly Sany et al. (2020), training clinical staff through an educational intervention positively influences patients' blood pressure control, leading to better self-efficacy and adherence. Therefore,

providing staff education to increase the clinicians' knowledge can improve the quality of life for the patients, reduce the cost of health care expenditures associated with HTN, and ultimately provide the most benefits to patients in preventing the long-term effects of the disease.

The stakeholders supporting this project included the deputy for clinical nursing and patient services, the medical director, and the chief of the primary care clinic. The impact of the staff education is aligned with current and future outcomes to streamline the hospital's digital education program. The medical director and the chief of primary care could use this project as a platform to provide in-service education for staff and guide consistent control and management of HTN in adults in the primary care setting. This project can also help fill the gap of delivering consistent treatment and control of HTN with minimal variance in the primary care clinic. With this project, I aimed to provide a staff education to prevent potential cardiovascular complications and minimize the challenges when dealing with HTN in the primary care setting.

The project can result in positive social change through helping emphasize the standardized treatment of hypertensive patients based on the best evidence-based practice guidelines. The project can also demonstrate the need for primary care clinics to develop uniform staff education programs as the research and evidence are updated. The staff education session could also potentially reduce the number of problems originating from the inadequate management of and control of HTN in vulnerable populations. Additionally, increased education for staff can demonstrate the benefit of equitable effects for all patients.

Summary

The purpose of the project was to provide a staff education program on the control and management of HTN in adults in a primary care setting. In Section 1, I discussed the project's significance and defined the practice problem, purpose, and projects goals. For the project, I assessed the clinical staff's current knowledge of the HTN control and management methods outlined in the 2020 VA/DOD CPG related to diagnosing and managing HTN to identify gaps in knowledge. I implemented an education program to teach the staff and help them build a general understanding of HTN control and management. Section 2 will include the background, context, and theoretical framework to support this project. I will also discuss the project's relevance to nursing practice and how it applied to the project site primary care setting.

Section 2: Background and Context

The purpose of the project was to develop an educational program to inform health care providers at a local primary care clinic of evidence-based practice guidelines for the diagnosis and management of HTN with a focus on the application of the 2020 VA/DOD CPGs for the diagnosis and management of HTN. The practice problem was that clinical providers lacked knowledge on the current VA/DOD CPGs for HTN and did not apply the guidelines uniformly to patient management. The guiding practice-focused question for this project was: Will an evidence-based HTN educational program improve providers' knowledge regarding HTN management in a primary care setting?

Concepts, Models, and Theories

The theoretical framework for this doctor of nursing practice (DNP) project was the health promotion model (HPM; McEwen & Wills, 2019). I used the framework of the HPM to develop the education program on creating support systems for staff to assist with patients' self-management efforts, thereby helping patients achieve their goals for HTN management.

In accordance with the HPM, patient groups should adjust their behaviors and acquire healthy habits to promote good health rather than simply prevent future problems (Lannon, 1997). The HPM framework includes nursing and behavioral sciences perspectives on components that assist patients in appropriating healthy behaviors (McEwen & Wills, 2019). Each component of human behavior is addressed by a component of the HPM, which includes individual features, experiences, cognitions, and affect specific to that behavior and behavioral results. In addition to being implemented

everywhere with any patient population, health promotion interventions are essential for maintaining and enhancing patient outcomes (McEwen & Wills, 2019).

The conceptual components of the HPM account for the individual norms and values and how the individual sees and interprets the issue, which can result in a commitment to make better choices, thereby promoting positive behavior to mitigate disease (McEwen & Wills, 2019). The HPM has social and theoretical significance to this project because HTN affects many individuals and can lead to CVD when not adequately treated. Despite the wealth of knowledge associated with managing HTN, treatment remains suboptimal (Milman et al., 2018), thereby providing opportunities for this project to result in valuable insights to fill gaps in knowledge on the topic. The HPM is clearly defined in the literature, with definitions being used consistently for each concept, and its propositions are reasonable, making it comprehensive and internally consistent. The HPM is also stated concisely to account for the numerous relevant factors when achieving health-promoting behavior to support this project. Verification of the testability of the HPM demonstrated multiple applications and corroboration in the literature with data analysis techniques (McEwen & Wills, 2019).

In the HPM, McEwen and Wills (2019) suggested that individual characteristics and experiences can help with health responses and making better choices that can positively influence illnesses and adverse health outcomes. Therefore, intervention in patients' lives involves the health care professional, the patients' family, the patient, or a combination of all three. Understanding the HPM will enable providers to make a

comprehensive assessment of their attitudes toward helping patients and environmental support that can help patients embrace healthy behaviors to sustain a healthy lifestyle.

Relevance to Nursing Practice

There are numerous CPGs to manage and treat HTN in the primary care setting, yet outcomes associated with proper management and treatment of HTN remain subpar (Nasser & Ferdinand, 2018). In a survey conducted from 2011 to 2014, the American Heart Association (AHA) found that the prevalence of HTN was 45.6% and 31.9 %, respectively among the adult U.S population, with only 24.1% of U.S. adults taking antihypertensive medication (Whelton et al., 2018). The AHA concluded that although there was an increased crude prevalence of HTN among U.S. adults, the initiation of hypertensive pharmacological and nonpharmacological interventions was modest (Muntner et al., 2020).

The current project is relevant to nursing practice because it is based on the need to increase the knowledge and awareness of clinical staff of the VA/DOD CPG on the diagnosis and management of HTN in the primary care setting. For the project, I provided the clinical team with an education program on HTN diagnosis and management in patients in a primary care setting. In the education program, I focused on screening and diagnosing hypertensive patients within a primary care clinic with nonpharmacological and pharmacological interventions by emphasizing the importance of lifestyle modifications and medication management. Promoting the appropriate management of HTN would further assist in preventing outcomes associated with CVD and renal diseases that can result from uncontrolled HTN. Lifestyle modifications, including proper

sleep, nutrition and exercise, are integral components to improve patient outcomes (Muntner et al., 2020). A hypertensive patient who smokes or is inactive is at increased risk; therefore, comprehensive, evidence-based guidelines could improve patients' results to help prevent the long-term effects of these diseases (Muntner et al., 2020). With a high incidence of HTN in the United States that affects vulnerable populations, it is essential to explore key intervention measures, such as staff education, to help alleviate any stressful burden on patients and providers. Implementing an HTN staff education program creates a knowledgeable staff to keep patients abreast of modifiable and nonmodifiable risk factors in HTN prevention, management, and control to give optimal care to patients.

Local Background and Context

HTN is one of the leading modifiable risk factors for CVD, which is the Number 1 cause of death in the United States (Foti et al., 2019). The cascading events of awareness, treatment, and control were not apparent in the project site primary care clinic where a high incidence of patients met the clinical diagnosis of HTN and was not adequately managed. A review of patients' clinical records showed that many patients met the clinical diagnosis of HTN; however, there was no adherence by the clinical staff to the evidence-based guidelines on the control and management of HTN, such as those provided by the VA/DOD CPGs. Although there was no particular explanation for poor HTN control in the project site clinic, there was a significant need for effective communication between providers and patients to enhance patient outcomes by identifying any significant barriers. Due to time constraints when working in a primary

care setting, it can be challenging to stay up to date on all the proven, evidence-based guidelines to ensure the best practice method is incorporated in the daily clinic activities. With the high incidence of HTN in the United States, it is crucial to explore intervention measures, such as staff education, to standardize practice, facilitate learning, and ease the burden to patients and caregivers by giving them tools to influence positive patient outcomes.

Role of the DNP Student

I developed and presented an evidence-based education program for clinical staff in a primary care setting to ensure that they completely understood the updated VA/DOD CPGs regarding HTN management. To develop the staff education program, the DNP Staff Education Manual steps were utilized. I provided the clinical staff with pertinent information and some common instances where patients do not participate in the full spectrum of their care. Providing this education to staff can translate into increased knowledge and the full participation of patients in their health care needs.

My motivation stemmed from my early diagnosis of HTN while taking an advanced pathophysiology class in my nurse practitioner program. Although I was a practicing nurse, my belief was that my elevated blood pressure 140/78 mm/Hg would not affect me since I was healthy and young. Upon further investigation, I learned decreased kidney function and end-organ damage are long-term effects of HTN. My knowledge of the issues was not up to date because I was biased to believe that only unhealthy and older people were diagnosed with HTN. However, due to reviewing peer-

review literature and updated CPGs, such as the VA/DOD guidelines, I increased my knowledge to reduce these biases.

Summary

In Section 2, I outlined the theoretical framework that guided this project for the development of an education program. There was a lack of standardization across the practice of the project site clinic staff when addressing HTN. Creating and delivering a staff education program supported clinicians in diagnosing and treating patients with a pharmacological and nonpharmacological approach to help patients achieve their goals for a healthier lifestyle. In Section 3, I will discuss the collection of data and outline the education program for staff in the primary care setting developed for this project.

Section 3: Collection and Analysis of Evidence

In the first section, I outlined a problem that I identified in clinical practice among clinical staff in a primary care setting: The lack of knowledge based on the diagnosis and management of HTN that could lead to adverse CVD outcomes. An effective strategy to alleviate this problem was to provide clinical staff with a current standardized education on the VA/DOD CPGs for HTN diagnosis and management. It is crucial to diagnose the problem early to initiate effective treatment and management through nonpharmacologic and pharmacologic interventions (Muntner et al., 2020). In the second section, I discussed the concept and theory that supported the development of an education program. In Section 3, I review the practice-focused question, discuss the sources of evidence, and describe how I collected and analyzed the data after implementing the educational program.

Practice-Focused Question

The practice-focused question to guide this project was: Will an evidence-based HTN educational program improve providers' knowledge regarding HTN management? At a primary health clinic in the midwestern United States, I observed the lack of sufficient staff knowledge with the early identification and treatment of patients with HTN on prior and subsequent visits. Identifying the knowledge gap and teaching clinicians in an education initiative to improve patient outcomes supports high-quality care. The education program developed in the current project can help standardize the knowledge of clinic staff about HTN and treatment to reduce adverse effects associated with CVD. Early identification of HTN can lead to early interventions, such as lifestyle

modifications, ranging from nonpharmacological interventions to pharmacological interventions. Providing the staff with the knowledge of HTN diagnosis and treatment is also likely to increase the clinicians' proficiency, which translates into superior care. Providing patient teaching is also crucial because self-care will lead to better patient compliance and management of their HTN diagnosis.

Sources of Evidence

The Healthy People Initiative 2020 reported that populations with HTN should quell over time while health equity is achieved for all, alongside eliminating disparities for the vulnerable (Sommers, 2014). The 2017 American College of Cardiology ACC/AHA guideline for the prevention, detection, evaluation, and management of high blood pressure redefined Stage 1 HTN as a systolic blood pressure reading starting at 130 mmHg or diastolic blood pressure at 80 mmHg (Nasser & Ferdinand, 2018). Redefining the diagnosis of HTN has caused a dramatic increase in workload for providers to deal with hypertensive patients since systolic parameters for diagnosis has lessened from 140 mmHg to 130 mmHg. This change in the definition of HTN requires a thoughtful approach that can impact the disenfranchised due to current substandard practices. The Healthy People Initiative 2020 allows for a redesign of CVD treatment plans to address HTN through education based on shared goals (Riegelman, 2010). Educational programs for providers have been shown to positively impact the delivery of health care to vulnerable populations, which leads to a decrease in blood pressure measurements (Gergely, 2018; Walton et al., 2014).

Before the educational program, the clinical staff at the project site completed a pretest questionnaire to measure their knowledge of the 2020 VA/DOD guidelines for the diagnosis and management of HTN. After the educational program was completed, a posttest questionnaire was presented to the clinical team to determine whether there had been any change in knowledge. I calculated the changes in knowledge that occurred during the educational program to determine the learning gain. The project was predicted to positively impact staff knowledge so they could teach patients to self-manage their high blood pressure to live healthier lives.

The 2020 VA/DOD CPG was the primary source of information used to develop the HTN education program for clinical staff members. To standardize staff understanding of current information regarding high blood pressure, I created a program demonstrating correct procedures for taking blood pressure and current evidence-based practice guidelines to teach patients how to self-manage high blood pressure through lifestyle adjustments. The goal was to create a program that would offer clinical personnel sufficient information to enable patients to take a more proactive approach to manage high blood pressure to reduce the prevalence of CVD.

Participants

I presented the educational program to clinical staff in a health clinic in the Midwestern United States. To accommodate their work schedule, I conducted the training after receiving supervisory approval at a scheduled time established by the organization for clinical training events. The participants were 10 clinical professionals, including nurse practitioners, physician assistants, medical physicians, registered nurses, and

licensed practical nurses. I chose these participants to ensure patient-centric care by ensuring that all staff at every level of the patient encounter had the same information so they could provide a consistent, evidence-based practice approach to standardized treatment in clinical practice across all clinical team members.

Procedures

The education program comprised a PowerPoint lecture presentation on HTN, the updated 2020 VA/DOD guidelines for managing HTN, and proper blood pressure measurement. The 2020 VA/DOD guidelines provide the most current standards of care on HTN management whose content validity and effectiveness are reported in the literature (Chobanian et al., 2003; Domenech et al., 2010; Foti et al., 2019; Lewington et al., 2003; Martinez Garcia et al., 2014; Robinson et al., 2008; Smoley et al., 2008). I gave handouts to the clinical staff to help reinforce the presentation's content and references. The program included pre- and posttest questionnaires to evaluate the current knowledge and practices of staff and assess for staff knowledge after the educational program was presented.

Protections

Participation in the program was entirely optional, and individuals could withdraw from it at any time. I maintained the confidentiality and anonymity of all participants and other pertinent information obtained from the staff and the questionnaires. Participants were required to complete a consent form stating their responses were voluntary nature and confidential. Responses to the questionnaires were not signed or assigned names; instead, they were anonymous. Prior to initiating the

program, I verified that the site agreement form had been signed and that the project was approved by the Walden Institutional Review Board (IRB). The Walden IRB's approval number is 02-08-22-1000331.

Analysis and Synthesis

The gathering and analysis of data gave a means of answering the practice-focused question. I used the pre- and posttest questionnaires with a total of 10 questions to evaluate the nursing staff's knowledge before and after the staff education program, respectively. This training was measured by learning gain, which was determined as part of the data collection and analysis. I calculated the learning gain using the following formula: (postlearning score minus prelearning score/maximum score minus prelearning score) X 100 (Brigham and Women's Hospital, n.d.). This demonstrated an improvement in the staff's knowledge between the pre- and postlearning assessment scores and the usefulness of the education program to educate staff on teaching patients how to control their high blood pressure successfully.

Summary

The goal of the DNP project was to use evidence from the literature review and pre- and posttest questionnaires to assess the knowledge of clinical staff before and after they have participated in a staff education program. I began the effort by generating educational content aligned with the 2020 VA/DOD CPGs. The education program consisted of a pretest, an education presentation, and a posttest. Calculating the staff's learning gain allowed for an evaluation of the clinical staff's understanding of HTN diagnosis and management. In this section, I described the methods used for developing

the education program and the processes for data collection and analysis. The next section contains a description of the project's outcomes, as well as a discussion of the significance of those outcomes in relation to the project's overarching objective.

Section 4: Findings and Recommendations

My objective in conducting this project was to improve provider awareness of how to manage hypertensive patients in primary care settings by implementing the 2020 VA/DOD CPGs on HTN management in primary care. I undertook this effort in response to health care practitioners' failure to adhere to appropriate evidence-based standards for managing HTN patients. Creation of this education program project was prompted by a local issue observed at the project site clinic in the midwestern United States. By standardizing staff knowledge of current, evidence-based practice guidelines based on VA/DOD CPGs, the educational program can better prepare health care clinicians to teach patients how to manage their health issues, reducing patient noncompliance with high blood pressure management, treatment, and control. This project was guided by the following practice-focused question: Will an evidence-based HTN educational program improves providers' knowledge regarding HTN management? Based on the acquired evidence and current CPG data, I developed a staff education session. I also obtained evidence by developing pre- and posttest questionnaires. After gathering and analyzing the data, I addressed the practice-focused question identified during evaluations of clinic employees before and following training.

The project's findings and their implications are discussed in Section 4. I also summarize the major points, provide recommendations, and present the project's strengths and limitations.

Findings and Implications

Ten participants from a clinic in the midwest region of the United States took part in the project, including two nurse practitioners, two physician assistants, two physicians, two registered nurses, and two licensed practical nurses. Based on the results of the pre- and posttest questionnaires (see Appendix B) administered before and after the educational program, staff members' learning gains on general information about HTN and current CPGs are shown in Table 1 and Figures 2 and 3.

Table 1

*Learning Gain Results From Participants' Pre- and Posttest Questionnaires (*N = *10)*

Participant	Pretest score	Posttest score	Learning gain
1	50	100	100%
2	70	100	100%
3	60	90	75%
4	70	100	100%
5	50	100	100%
6	60	100	100%
7	80	100	100%
8	60	100	100%
9	50	90	80%
10	70	100	100%

Figure 1

Average Scores of Pretests Versus Posttests

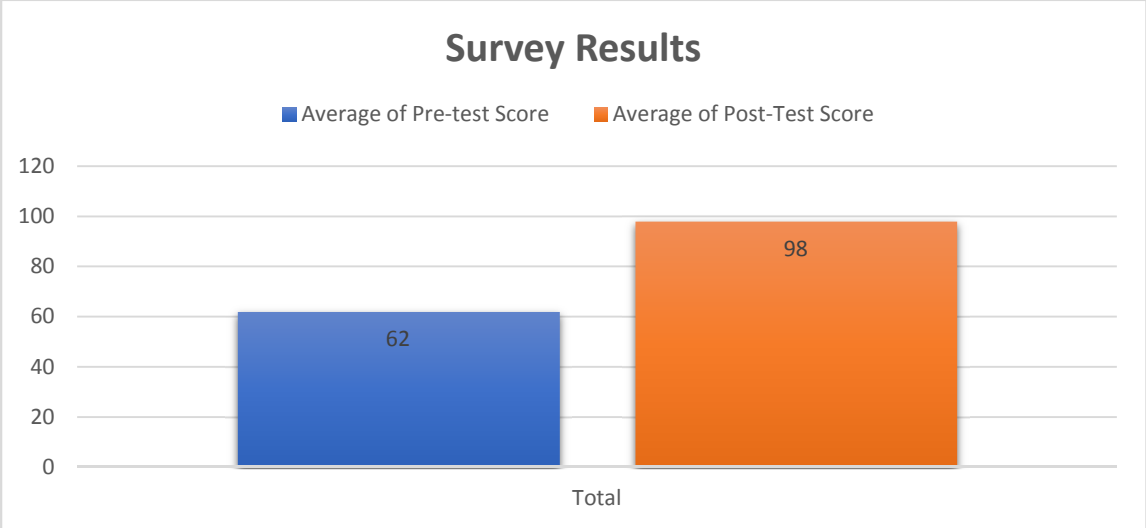
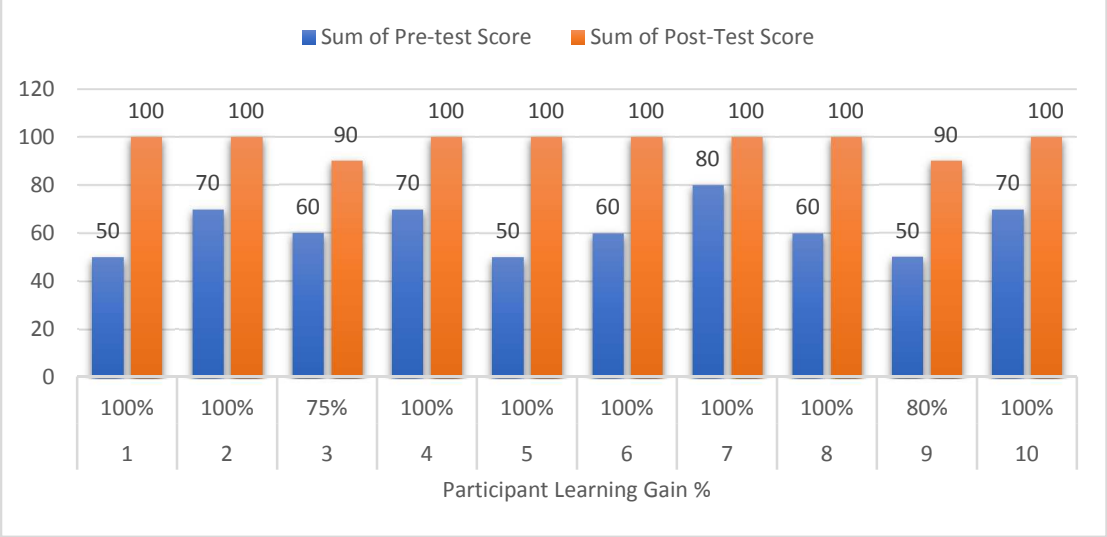


Figure 2

Participant Learning Gain



Staff Knowledge of CPG and HTN Information (Questions 1–4)

Current HTN data and baseline knowledge regarding HTN were the subjects of the first four questions on the pretest questionnaire (see Appendix B). Except for Question 4, the questionnaire results suggested that staff members lacked sufficient knowledge of the 2020 updated VA/DOD CPGs. All staff participants ($N = 10$) were aware of the VA/DOD CPGs as evidence-based care; however, none of the staff participants ($n = 0$) were aware of the updated CPGs in Questions 1–3.

HTN Guidelines on Interventions (Questions 5–8)

Nonpharmacological management, the DASH diet, risk factors, and medication guideline treatments were covered in Questions 5, 6, 7, and 8, respectively, in the pretest questionnaire (see Appendix B). Every staff member ($N = 10$) correctly answered Questions 5–7 . However, nine staff members provided incorrect responses to Question 8. In the case of Questions 5, 6, and 7, these topics were covered in all previous HTN guidelines, demonstrating an adequate level of understanding. The findings showed that staff members lacked sufficient knowledge of relevant updated guidelines for commencing therapy in HTN patients.

Staff Knowledge of Blood Pressure Measurement and Implications of HTN (Questions 9-10)

Most of the clinical staff ($n = 6$) were unfamiliar with all of the critical aspects while taking blood pressure, but they were aware of the ramifications of high blood pressure (i.e., HTN). Although providers are given training on taking blood pressure, taking blood pressure daily is assigned to the clinical staff other than the provider.

In summary, the pretest results revealed that participants had inaccurate and insufficient knowledge of the updated 2020 VA/DOD CPGs before participating in the educational program, with an average pretest score of 62% before the educational program (see Figure 1). The results of the posttest questionnaire revealed that the education program boosted clinical staff knowledge of HTN by an average of 98% (see Figure 2), indicating that the education program was successful. The results showed that eight clinical staff had a learning gain of 100% (see Figure 3), indicating an increase in the knowledge of clinic personnel; however, all participants had a positive learning gain as a result of the education program.

Recommendations

Several researchers identified health care professional education as a successful technique for learning, with evidence-based suggestions, such as lifestyle change, playing an important role (Brunstrom et al., 2020; Islam et al., 2021). In this project, staff acknowledged the education presentation's value in updating their knowledge of HTN and current VA/DOD CPGs. As a result, I recommend that the program be used as part of a yearly in-service education program to improve the competency of clinic staff. The staff training can be targeted at current employees who would benefit from receiving up-to-date knowledge on how to better assist HTN patients in self-managing their health conditions. The education program should also be included in the onboarding process for new employees so they can obtain the most up-to-date standard of care that follows evidence-based practice criteria.

I also recommend that clinic staff do follow-up monitoring of patients to establish whether the transfer of information from staff to patients was carried out effectively. During each patient's subsequent clinic visit, medical practitioners can inquire whether the patient recalls the health information that was previously provided to them and whether they have any additional concerns regarding the management of their health condition. Patients who take an active role in their care due to open communication regarding HTN between health care providers and themselves benefit from the communication (Brewer et al., 2021).

Finally, I recommend monthly chart reviews from peers as a helpful tool to ensure that HTN therapies are sustained and that health care providers follow the evidence-based standards in their practices.

Strengths and Limitations of the Project

Clinical providers recognized the education program's value in developing a consistent practice of care in the project site clinic for HTN patients, especially given the fact that there are numerous CPGs for HTN patients. The recommendations generated from the project were its greatest asset. The result is an appropriately updated CPG that is nationally recognized. Everyone on the clinic's staff received the education program, and the posttest results indicated that they had a learning gain related to their knowledge of the VA/DOD CPGs. A variety of backgrounds, education, and skills were represented among the participants in the study. These differences could have had an impact on the findings of the study. The team's desire to willingly engage in the study to develop their

practice and gain a fresh understanding of current recommendations was also a significant strength of the project.

The inability to follow up with clinical staff following the education program created a limitation and did not allow me to determine the long-term impact of the staff education program. Participation in this study was limited to a single primary care clinic, and the small sample size of 10 patients was another limitation. Due to the small sample size, it is difficult to extrapolate the findings to other contexts. However, the study's primary goal was to close the knowledge gap among clinical staff in a primary care setting, which the small sample size did not prevent me from accomplishing.

Section 5: Dissemination Plan

HTN is a complicated medical disorder with varying complexity that serves as a foundation for a wide range of other medical conditions (CITE). The focus of this DNP project was to provide an educational program in a primary care setting to enhance provider practice through standardization and, ultimately, boost provider knowledge. I took a straightforward approach to disseminate this project through use of a PowerPoint presentation. The use of the hospital's digital platform is an appropriate option for its future dissemination in yearly in-services and the onboarding of clinical staff. The instructional program showed its usefulness in increasing the knowledge of clinical personnel, standardizing knowledge on high blood pressure, and improving blood pressure management procedures among staff. Project dissemination is an integral part of my responsibilities as a DNP student, and publishing these findings is a goal after graduation.

Analysis of Self

My DNP journey was extremely demanding, but the challenges that I faced to complete this project were well worth the hardships I had to endure. As a student scholar, my academic journey has allowed me to identify my strengths and weaknesses. It was difficult and frustrating to persevere through the project's challenges, but it helped me realize that being a scholar and a change agent requires mental toughness to be successful. I maintained a healthy work-life balance to avoid burnout and devote the necessary amount of time to fulfilling my academic responsibilities for the DNP program. This project was made possible because I had two mentors who were willing to assist me

with the unfathomable number of questions that I had to answer to formulate my thoughts for completing the project. With their assistance, I gained the perspective I needed to better understand the areas I needed to work on and persevere through the DNP project's completion.

I was able to surmount the obstacles encountered while finishing my DNP project because I acquired confidence in my ability to solve problems due to the experience. I was required to identify a problem and devise a feasible solution to complete the project. Furthermore, it was my obligation to successfully see the project through to completion. As a result of my persistence in resolving issues that arose throughout the project and writing process, I now have the confidence to continue contributing to the nursing profession.

Summary

In this project, I looked into the impact of increasing clinical staff knowledge of the updated 2020 VA/DOD CPGs for managing and diagnosing high blood pressure in the primary care setting. The staff educational program at a hospital in the midwestern United States established a standardized set of practices for the clinical staff to use in their daily work. The implementation of the education program resulted in improvements in clinical staff's awareness of the VA/DOD CPGs and the possibility for transferring knowledge about self-management and self-control of high blood pressure to patients in a primary care setting.

References

Brewer, J., Bartlett, M., Harris, D., & Hui, C. (2021). Improving communication between healthcare providers and pulmonary arterial hypertension patients: A survey of patient preferences. *Pulmonary Circulation*, *11*(2), 1–8. https://doi.org/10.1177/20458940211015813

Brigham and Women's Hospital. (n.d.). *BWH center for nursing excellence: Pre and post test guidelines* [PDF]. https://www.brighamandwomens.org/assets/BWH/medical-professionals/nursing/pdfs/pre-post-test.pdf

Brunström, M., Ng, N., Dahlström, J., Lindholm, L. H., Lönnberg, G., Norberg, M., Nyström, L., Weinehall, L., & Carlberg, B. (2020). Association of physician education and feedback on hypertension management with patient blood pressure and hypertension control. *JAMA Network Open*, *3*(1), e1918625. https://doi.org/10.1001/jamanetworkopen.2019.18625

Centers for Disease Control and Prevention. (2016). *Public health action plan to prevent heart disease and stroke.* https://www.cdc.gov/dhdsp/action_plan/

Chobanian, A., Bakris, G., & Black, H. (2003). The seventh report of the joint national committee on prevention, detection, evaluation, and treatment of high blood pressure: The JNC 7 report. *ACC Current Journal Review*, *12*(4), 31–32. https://doi.org/10.1016/s1062-1458(03)00270-8

Domenech, M., Estruch, R., Ros, E., & Coca, A. (2010). Effect of the Mediterranean diet on blood pressure: The Ambulatory Blood Pressure substudy (predimed-ABPM). *Journal of Hypertension*, *28*, e373.

https://doi.org/10.1097/01.hjh.0000379349.42484.74

Ferdinand, K. C., & Nasser, S. A. (2013). A review of the efficacy and tolerability of combination amlodipine/valsartan in non-White patients with hypertension. *American Journal of Cardiovascular Drugs*, *13*, 301–313. https://doi.org/10.1007/s40256-013-0033-4

Filippou, C. D., Tsioufis, C. P., Thomopoulos, C. G., Mihas, C. C., Dimitriadis, K. S., Sotiropoulou, L. I., Chrysochoou, C. A., Nihoyannopoulos, P. I., & Tousoulis, D. M. (2020). Dietary approaches to stop hypertension (DASH) diet and blood pressure reduction in adults with and without hypertension: A systematic review and meta-analysis of randomized controlled trials. *Advances in Nutrition*, *11*(5), 1150–1160. https://doi.org/10.1093/advances/nmaa041

Foti, K., Wang, D., Appel, L. J., & Selvin, E. (2019). Hypertension awareness, treatment, and control in us adults: Trends in the hypertension control cascade by population subgroup (National Health and Nutrition Examination Survey, 1999–2016). *American Journal of Epidemiology*, *188*(12), 2165–2174. https://doi.org/10.1093/aje/kwz177

Gergely, S. W. (2018). Cultural competency matters: Calling for a deeper understanding of healthcare disparities among nurse leaders. *Journal of Nursing Administration*, *48(10)*, 474–477. https://doi.org/10.1097/NNA.0000000000000654

Guy-Walls, P., & Long, J. G. (2017). African Americans and heart disease. *Health & Social Work*, *42*(4), 247–249. https://doi.org/10.1093/hsw/hlx033

Healthy People 2020. (2014). *Healthy People 2020 brochure* (ODPHP Publication No.

b0132) [PDF]. https://www.healthypeople.gov/sites/default/files/HP2020_brochure_with_LHI_508_FNL.pdf

Herbert, P. L., Sisk, J. E., Tuzzio, L., Casabianca, J. M., Pogue, V. A., Wang, J. J., Chen, Y., Cowles, C., & McLaughlin, M. (2012). Nurse-led disease management for management for hypertension control in a diverse urban community: A randomized trial. *Journal of General Internal Medicine*, *27*(6), 630–639. https://doi.org/10.1007/s11606-011-1924-2

Islam, F., Lambert, E. A., Islam, S., Islam, M., Biswas, D., McDonald, R., Maddison, R., Thompson, B., & Lambert, G. W. (2021). Lowering blood pressure by changing lifestyle through a motivational education program: A cluster randomized controlled trial study protocol. *Trials*, *22*(1). https://doi.org/10.1186/s13063-021-05379-2

Lannon, S. L. (1997). Using a health promotion model to enhance medication compliance. *Journal of Neuroscience Nursing*, *3*, 170–177.

Lewington, S., Clarke, R., Qizilbash, N., Peto, R., & Collins, R. (2003). Age-specific relevance of usual blood pressure to vascular mortality. *The Lancet*, *361*(9366), 1391–1392. https://doi.org/10.1016/s0140-6736(03)13064-4

Martínez García, L., McFarlane, E., Barnes, S., Sanabria, A., Alonso-Coello, P., & Alderson, P. (2014). Updated recommendations: An assessment of nice clinical guidelines. *Implementation Science*, *9*(1). https://doi.org/10.1186/1748-5908-9-72

McEwen, M., & Wills, E. M. (2019). *Theoretical basis for nursing* (5th ed.). Wolters

Kluwer Health.

Milman, T., Joundi, R. A., Alotaibi, N. M., & Saposnik, G. (2018). Clinical inertia in the pharmacological management of hypertension: A systematic review and meta-analysis. *Medicine*, *97*(25), 1–9. https://doi.org/10.1097/MD.0000000000011121

Muntner, P., Hardy, S. T., Fine, L. J., Jaeger, B. C., Wozniak, G., Levitan, E. B., & Colantonio, L. D. (2020). Trends in blood pressure control among us adults with hypertension, 1999-2000 to 2017-2018. *JAMA*, *324*(12), 1190. https://doi.org/10.1001/jama.2020.14545

Nasser, S. A., & Ferdinand, K. C. (2018). Community outreach to African-Americans: Implementations for controlling hypertension. *Current Hypertension Reports*, *20*(4), 1–9. https://doi.org/10.1007/s11906-018-0834-6

Riegelman, R. (2010). Education for health: An education underpinning for Healthy People 2020. *Public Health Reports*, *125*, 148–152.

Robinson, J. H., Callister, L. C., Berry, J. A., & Dearing, K. A. (2008). Patient-centered care and adherence: Definitions and applications to improve outcomes. *Journal of the American Academy of Nurse Practitioners*, *20*(12), 600–607. https://doi.org/10.1111/j.1745-7599.2008.00360.x

Smoley, B. A., Smith, N. L., & Runkle, G. P. (2008). Hypertension in a population of active duty service members. *The Journal of the American Board of Family Medicine*, *21*(6), 504–511. https://doi.org/10.3122/jabfm.2008.06.070182

Sommers, B. D. (2014). Hypertension and Healthy People 2020: The role of health insurance expansion. *Circulation*, *130*(19), 1674–1675.

https://doi.org/10.1161/circulationaha.114.012874

Tavakoly Sany, S., Behzhad, F., Ferns, G., & Peyman, N. (2020). Communication skills training for physicians improves health literacy and medical outcomes among patients with hypertension: A randomized controlled trial. *BMC Health Services Research*, *20*(1). https://doi.org/10.1186/s12913-020-4901-8

Tschanz, C. P., Cushman, W. C., Harrell, C. E., Berlowitz, D. R., & Sall, J. L. (2020). This synopsis summarizes key features of a joint va/dod guideline on diagnosis and management of hypertension in the primary care setting. *Annals of Internal Medicine*, *173*(11), 904–913. https://doi.org/10.7326/m20-3798

Walter, R. R. (2017). Emancipatory nursing praxis: A theory of social justice in nursing. *Advances in Nursing Science*, *40*(3), 225–243. https://doi.org/10.1097/ANS.0000000000000157

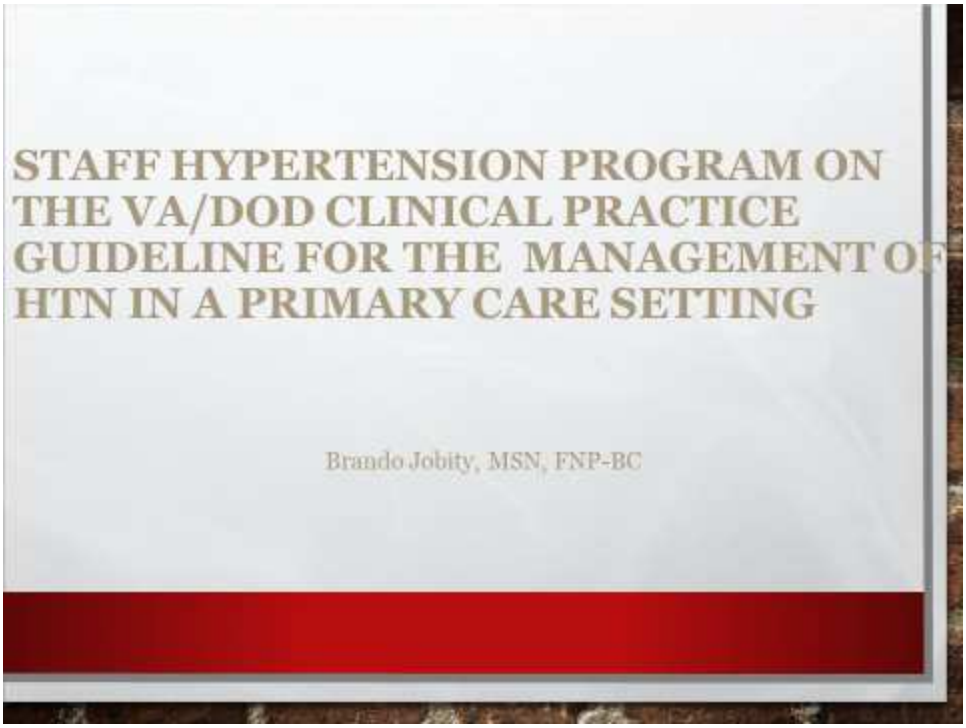
Walton-Moss, B., Samuel, L., Nguyen, T. H., Commodore-Mensah, Y., Hayat, M. J., & Szanton, S. L. (2014). Community-based cardiovascular health interventions in vulnerable populations: A systematic review. *Journal of Cardiovascular Nursing*, *29*(4), 293–307. https://doi.org/10.1097/JCN.0b013e31828e2995

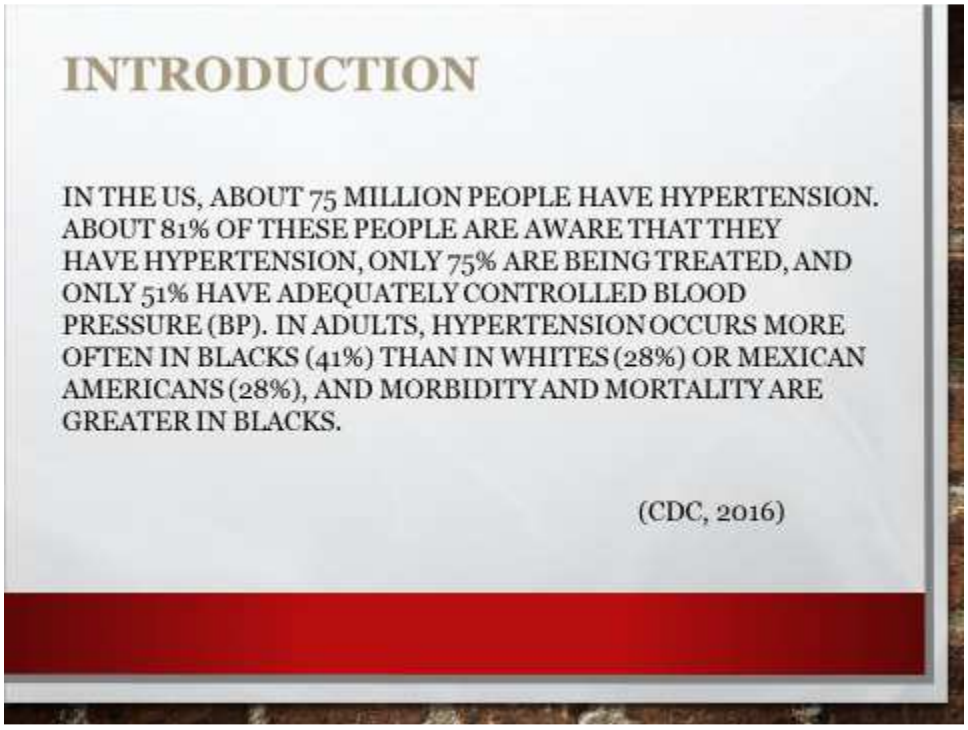
Whelton, P. K., Carey, R. M., Aronow, W. S., Casey, D. E., Collins, K. J., Himmelfarb, C. D., DePalma, S. M., Gidding, S., Jamerson, K. A., Jones, D. W., MacLaughlin, E. J., Munter, P., Ovbiagele, B., Smith, S. C., Spencer, C. C., Stafford, R. S., Taler, S. J., Thomas, R. J., Williams, K. A.,...Wright, J. T. (2018). 2017 ACC/AHA/AAPA/ABC/ACPM/ AGS/APhA/ASH/ASPC/NMA/PCNA guideline for the prevention, detection, evaluation, and management of high blood pressure

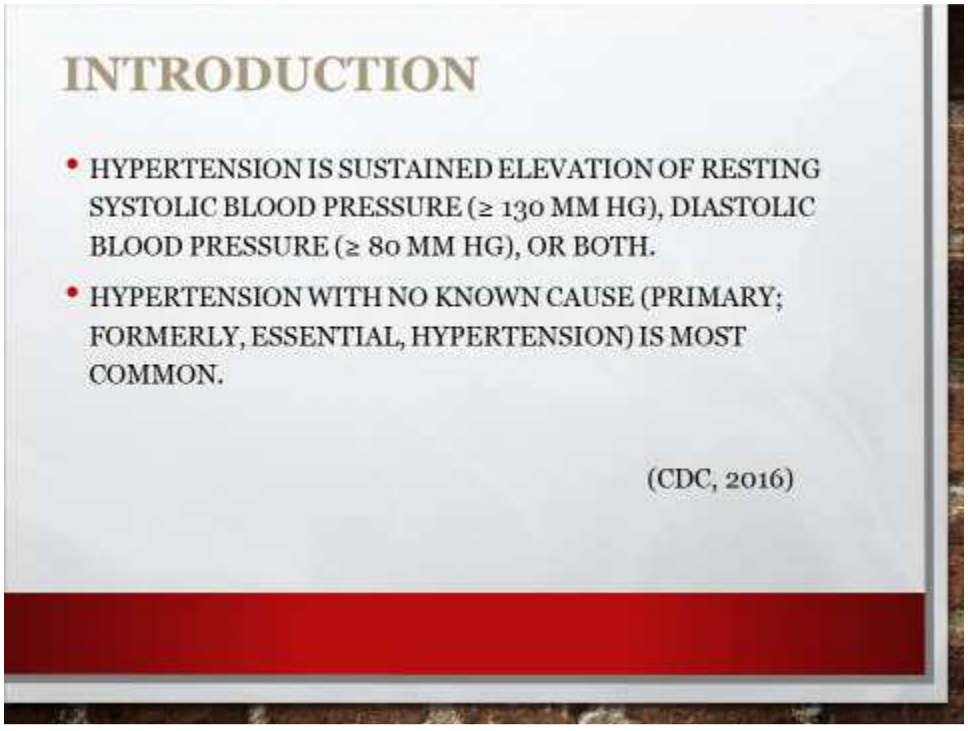
in adults: A report of the American College of Cardiology/American Heart Association Task Force on clinical practice guidelines. *Journal of the American College of Cardiology*, *71*(19), e127–e248. https://doi.org/10.1016/j.jacc.2017.11.006

Zhang, Y., & Moran, A. E. (2017). Trends in the prevalence, awareness, treatment, and control of hypertension among young adults in the United States, 1999 to 2014. *Hypertension*, *70*(4), 736–742. https://doi.org/10.1161/HYPERTENSIONAHA.117.09801

Appendix A: Staff Hypertension Program Presentation




INTRODUCTION
IN THE US, ABOUT 75 MILLION PEOPLE HAVE HYPERTENSION. ABOUT 81% OF THESE PEOPLE ARE AWARE THAT THEY HAVE HYPERTENSION, ONLY 75% ARE BEING TREATED, AND ONLY 51% HAVE ADEQUATELY CONTROLLED BLOOD PRESSURE (BP). IN ADULTS, HYPERTENSION OCCURS MORE OFTEN IN BLACKS (41%) THAN IN WHITES (28%) OR MEXICAN AMERICANS (28%), AND MORBIDITY AND MORTALITY ARE GREATER IN BLACKS.
(CDC, 2016)


INTRODUCTION
• HYPERTENSION IS SUSTAINED ELEVATION OF RESTING SYSTOLIC BLOOD PRESSURE (≥ 130 MM HG), DIASTOLIC BLOOD PRESSURE (≥ 80 MM HG), OR BOTH.
• HYPERTENSION WITH NO KNOWN CAUSE (PRIMARY; FORMERLY, ESSENTIAL, HYPERTENSION) IS MOST COMMON.
(CDC, 2016)

CLASSIFICATION OF BLOOD PRESSURE IN ADULTS

Classification	Blood Pressure
Normal blood pressure	< 120/80 mm Hg
Elevated blood pressure	120-129/< 80 mm Hg
Stage 1 hypertension	130-139 mm Hg (systolic) OR 80-89 mm Hg (diastolic)
Stage 2 hypertension	≥ 140 mm Hg (systolic) OR ≥ 90 mm Hg (diastolic)

(CDC, 2016)

ETIOLOGY

- HYPERTENSION MAY BE
  PRIMARY (85% OF CASES)
- SECONDARY
- PRIMARY HYPERTENSION
- HEMODYNAMICS AND PHYSIOLOGIC COMPONENTS VARY, INDICATING THAT PRIMARY HYPERTENSION IS UNLIKELY TO HAVE A SINGLE CAUSE.
- SECONDARY HYPERTENSION
  - DIABETES MELLITUS
  - OBESITY
  - OBSTRUCTIVE SLEEP APNEA
  - PRIMARY ALDOSTERONISM
  - RENOVASCULAR DISEASE


SYMPTOMS AND SIGNS
HYPERTENSION IS USUALLY ASYMPTOMATIC UNTIL COMPLICATIONS DEVELOP IN TARGET ORGANS.
DIZZINESS, FACIAL FLUSHING, HEADACHE, FATIGUE, EPISTAXIS, AND NERVOUSNESS ARE NOT CAUSED BY UNCOMPLICATED HYPERTENSION
A 4TH HEART SOUND IS ONE OF THE EARLIEST SIGNS OF HYPERTENSIVE HEART DISEASE
(Bonaca, 2017)


RISK FACTORS
TOBACCO USE
SALT INTAKE
OBESITY
ALCOHOL INTAKE
GENETIC PREDISPOSITION
ENVIRONMENTAL FACTORS
OLDER AGE
(CDC, 2016)

COMPLICATIONS

- CORONARY ARTERY DISEASE (CAD)
- MYOCARDIAL INFARCTION (MI)
- HEART FAILURE
- STROKE (PARTICULARLY HEMORRHAGIC)
- RENAL FAILURE
- DEATH

(CDC, 2016)

DIAGNOSIS

- BLOOD PRESSURE MEASUREMENT USED FOR FORMAL DIAGNOSIS SHOULD BE AN AVERAGE OF 2 OR 3 MEASUREMENTS TAKEN AT 2 OR 3 DIFFERENT TIMES WITH THE PATIENT:
  - SEATED IN A CHAIR FOR > 5 MINS
  - LIMB SUPPORTED AT HEART LEVEL
  - NO CLOTHING COVERING AREA OF CUFF PLACEMENT
  - NO EXERCISE, CAFFEINE OR SMOKING IN LAST 30 MINS

TREATMENT (NON-PHARMACOLOGICAL)

- LIFESTYLE MODIFICATION
  - SMOKING CESSATION
  - SODIUM RESTRICTION
    - (DASH DIET)
  - EXERCISE
  - WEIGHT CONTROL
- ENCOURAGED IN ALL PATIENTS WITH ALL STAGES OF HTN

DASH DIET

TREATMENT (PHARMACOLOGICAL)

- PREVIOUSLY, THIAZIDE DIURETICS WERE STRONGLY RECOMMENDED AS INITIAL DRUGS OF CHOICE FOR MOST PATIENTS. THIS RECOMMENDATION WAS BASED ON RANDOMIZED TRIALS, INCLUDING THE ANTIHYPERTENSIVE AND LIPID LOWERING TREATMENT TO PREVENT HEART ATTACK TRIAL (ALLHAT). MORE RECENTLY, DATA HAVE SHOWN SIMILAR EFFICACY FOR DIURETICS, CALCIUM CHANNEL BLOCKERS, ARBS AND ACE INHIBITORS.
- ANY OF THESE CLASSES OF MEDICATIONS COULD BE USED AS FIRST LINE, AND, GENERALLY, THE CHOICE OF WHICH AGENT DEPENDS ON AGE, RACE, AND COMORBIDITIES.

(Foti et al., 2019)

TREATMENT (PHARMACOLOGICAL)

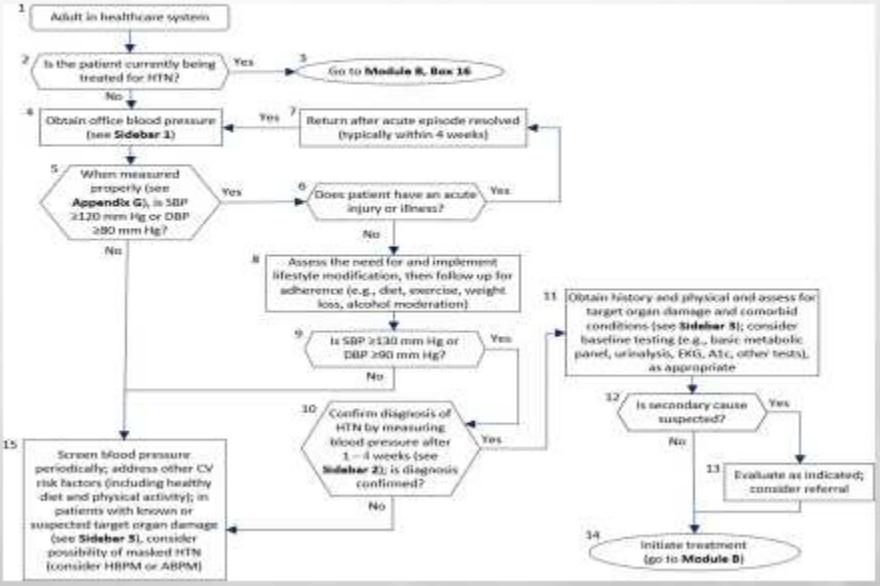
- GENERAL POPULATION:
  - RECOMMEND ONE OR MORE OF THE FOLLOWING:
    - THIAZIDE-TYPE DIURETICS
    - ACEIS OR ARBS
    - LONG-ACTING CCBS
  - FOR PATIENTS UNLIKELY TO ACHIEVE GOAL WITH MONOTHERAPY (E.G., PATIENTS WITH SBP/DBP OF >20/10 MM HG ABOVE GOAL), CONSIDER INITIATING TREATMENT WITH COMBINATION THERAPY OR MONOTHERAPY WITH CLOSE FOLLOW-UP FOR TITRATION AND/OR ADDITION OF MEDICATIONS BASED ON BLOOD PRESSURE RESPONSE

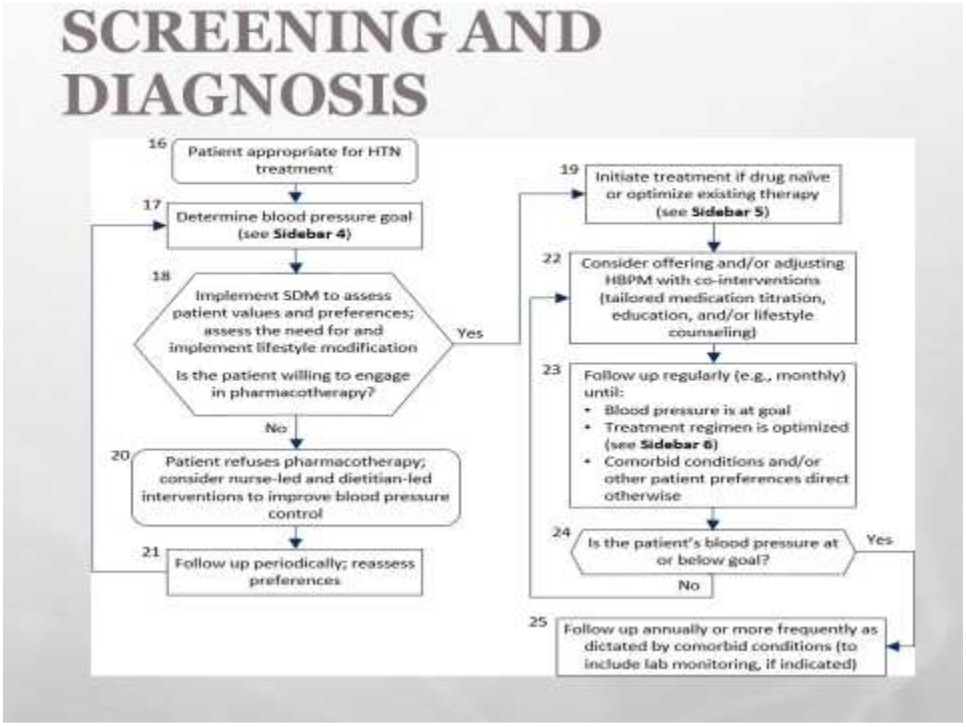
(Foti et al., 2019)

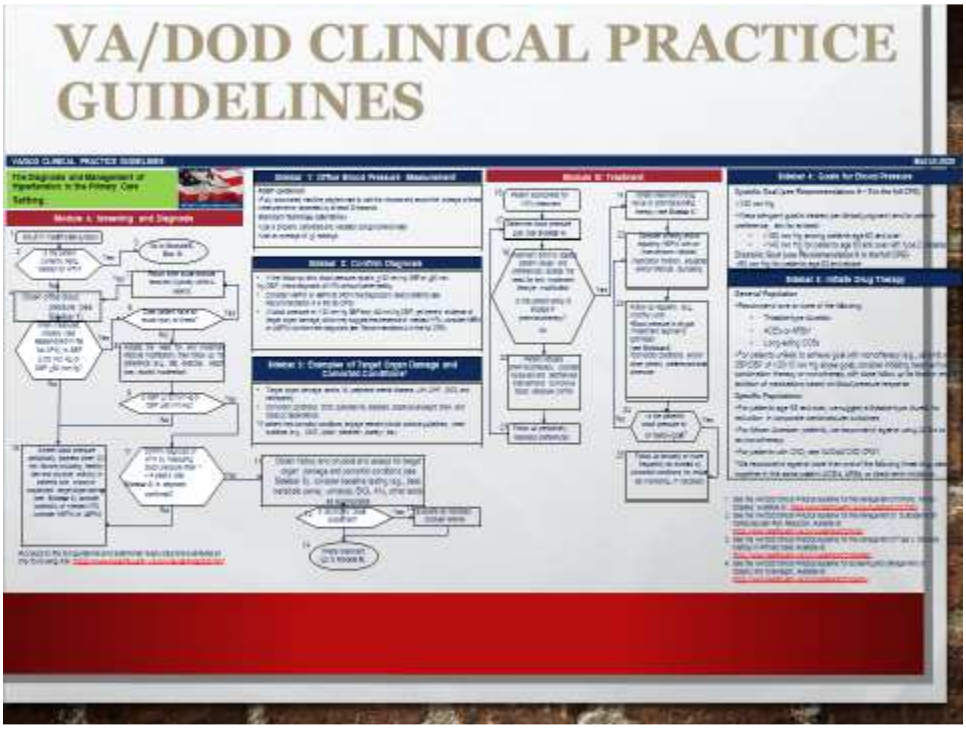
TREATMENT (PHARMACOLOGICAL)

- ASSESS ADHERENCE
- CONSIDER EVALUATING FOR INTERFERING SUBSTANCES (SOME PRESCRIPTION MEDICATIONS, NSAIDS, ALCOHOL, RECREATIONAL DRUGS)
- CONSIDER EVALUATING AND ADDRESSING CONTRIBUTING LIFESTYLE FACTORS
- OPTIMIZE TREATMENT
  - TITRATE INITIAL DRUG
  - ADD ANOTHER AGENT FROM A DIFFERENT CLASS

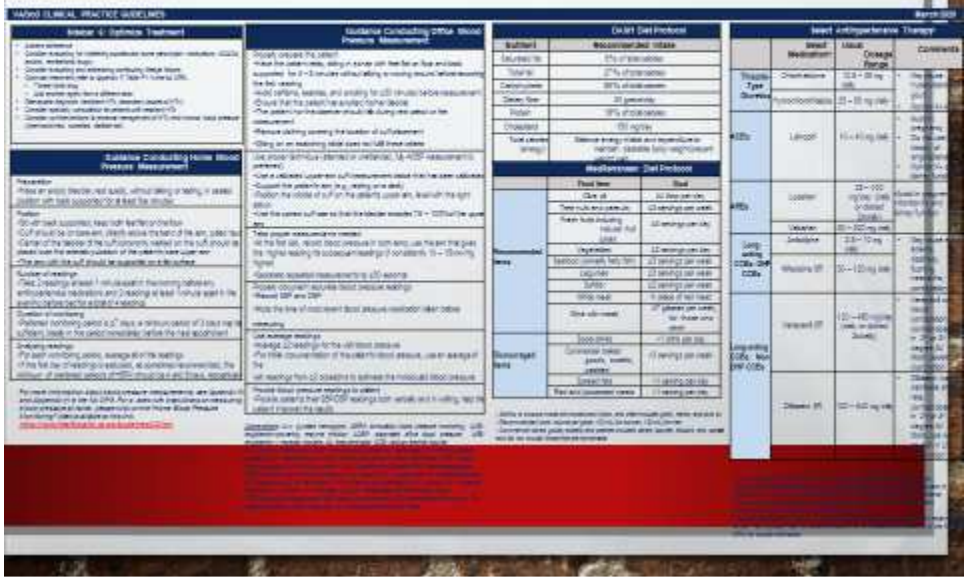
SCREENING AND DIAGNOSIS




SCREENING AND DIAGNOSIS
16 Patient appropriate for HTN treatment
17 Determine blood pressure goal (see Sidebar 4)
18 Implement SDM to assess patient values and preferences; assess the need for and implement lifestyle modification
Is the patient willing to engage in pharmacotherapy?
Yes
No
20 Patient refuses pharmacotherapy; consider nurse-led and dietitian-led interventions to improve blood pressure control
21 Follow up periodically; reassess preferences
19 Initiate treatment if drug naïve or optimize existing therapy (see Sidebar 5)
22 Consider offering and/or adjusting HBPM with co-interventions (tailored medication titration, education, and/or lifestyle counseling)
23 Follow up regularly (e.g., monthly) until:
• Blood pressure is at goal
• Treatment regimen is optimized (see Sidebar 6)
• Comorbid conditions and/or other patient preferences direct otherwise
24 Is the patient's blood pressure at or below goal?
Yes
No
25 Follow up annually or more frequently as dictated by comorbid conditions (to include lab monitoring, if indicated)


VA/DOD CLINICAL PRACTICE GUIDELINES

VA/DOD CLINICAL PRACTICE GUIDELINES



REFERENCES

CENTERS FOR DISEASE CONTROL AND PREVENTION. (2016). PUBLIC HEALTH ACTION PLAN TO PREVENT HEART DISEASE AND STROKE. HTTPS://WWW.CDC.GOV/DHDSP/ACTION_PLAN/

BONACA, M. P. (2017). HYPERTENSION. *CARDIOVASCULAR MEDICINE*, 1–56. RETRIEVED DECEMBER 5, 2021, FROM HTTPS://DOI.ORG/10.2310/7900.1099

FOTI, K., WANG, D., APPEL, L. J., & SELVIN, E. (2019). HYPERTENSION AWARENESS, TREATMENT, AND CONTROL IN US ADULTS: TRENDS IN THE HYPERTENSION CONTROL CASCADE BY POPULATION SUBGROUP (NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY, 1999–2016). *AMERICAN JOURNAL OF EPIDEMIOLOGY*, *188*(12), 2165–2174. HTTPS://DOI.ORG/10.1093/AJE/KWZ177

HEALTHY PEOPLE 2020 BROCHURE (ODPHP PUBLICATION NO. B0132) [PDF]. (2014). HTTPS://WWW.HEALTHYPEOPLE.GOV/SITES/DEFAULT/FILES/HP2020_BROCHURE_WITH_LHI_508_FNL.PDF

Appendix B: Pretest Questionnaire

1. In the United States, in the population with hypertension what percentage of those people have adequately controlled blood pressure?

    a. 42%
    b. 51%
    c. 67%
    d. 83%

2. Two clinical algorithms are included in the VA/DoD Hypertension CPG.
    a. True
    b. False

3. According to the VA/DoD Hypertension CPG, the blood pressure objective for an otherwise healthy adult is _____
    a. <110 mmHg
    b. <120 mmHg
    c. <130 mmHg
    d. <140 mmHg

4. The use of VA/DoD Clinical Practice Guidelines, such as those for the management of hypertension in primary care, assists clinicians in implementing ____
    a. Evidence based care
    b. Best practices
    c. Lean Six Sigma
    d. All of the above

5. Which of the following non-pharmacologic therapies has been shown to be useful in the treatment of hypertension?
    a. Sodium restriction
    b. Weight control
    c. Smoking cessation
    d. All of the above

6. Is the Dash Diet beneficial in lowering blood pressure?
    a. True
    b. False

7. Numerous risk factors contribute to hypertension. Among the risk factors are the following: (Select all that apply)
    a. Age

b. BMI
c. Caffeine use
d. More common in men

8. Which of the following drug classes can be used as a first-line treatment for hypertension?
    a. ACE
    b. ARB
    c. Calcium channel Blockers
    d. All of the above

9. What is an important consideration to keep in mind when taking your blood pressure? (Select all that apply)
    a. Seated in a chair for < 5mins
    b. Limb not supported at heart level
    c. Clothing
    d. No smoking or exercise in the last 30 mins

10. What are some of the implications of high blood pressure?
    a. Stroke
    b. Congestive Heart Failure
    c. Chronic Kidney Disease
    d. All of the above

Appendix C: Posttest Questionnaire

1. In the United States, in the population with hypertension what percentage of those people have adequately controlled blood pressure?

    a. 42%
    b. 51%
    c. 67%
    d. 83%

2. Two clinical algorithms are included in the VA/DoD Hypertension CPG.
    a. True
    b. False

3. According to the VA/DoD Hypertension CPG, the blood pressure objective for an otherwise healthy adult is _____
    a. <110 mmHg
    b. <120 mmHg
    c. <130 mmHg
    d. <140 mmHg

4. The use of VA/DoD Clinical Practice Guidelines, such as those for the management of hypertension in primary care, assists clinicians in implementing ____
    a. Evidence based care
    b. Best practices
    c. Lean Six Sigma
    d. All of the above

5. Which of the following non-pharmacologic therapies has been shown to be useful in the treatment of hypertension?
    a. Sodium restriction
    b. Weight control
    c. Smoking cessation
    d. All of the above

6. Is the Dash Diet beneficial in lowering blood pressure?
    a. True
    b. False

7. Numerous risk factors contribute to hypertension. Among the risk factors are the following: (Select all that apply)
    a. Age

b. BMI
c. Caffeine use
d. More common in men

8. Which of the following drug classes can be used as a first-line treatment for hypertension?
    a. ACE
    b. ARB
    c. Calcium channel Blockers
    d. All of the above

9. What is an important consideration to keep in mind when taking your blood pressure? (Select all that apply)
    a. Seated in a chair for < 5mins
    b. Limb not supported at heart level
    c. Clothing
    d. No smoking or exercise in the last 30 mins

10. What are some of the implications of high blood pressure?
    a. Stroke
    b. Congestive Heart Failure
    c. Chronic Kidney Disease
    d. All of the above