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An Educational Module on High Blood Pressure Management and Control

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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2019

Abstract

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MS, Walden University, 2012

BS, Walden University, 2010

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

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Abstract

An educational module, based on evidence-based practice (EBP) guidelines by the 8th Joint National Committee (JNC 8) and the American College of Cardiology (ACC), was created and implemented to determine if its implementation would impact the knowledge of clinic staff regarding current EBP guidelines about self-management of hypertension (HTN). The module has the potential to contribute to the resolution of patient noncompliance on HTN treatment and management by increasing nursing staff proficiency in knowledge transfer to patients on effective self-management of their health condition. The creation of the module was guided by the concept of need or asset assessment and the theory of planned behavior. The module was composed of 2 short lecture presentations on HTN, current EBP guidelines on lifestyle modifications, and proper blood pressure measurement. The module also included pre- and postlecture surveys to evaluate knowledge and practices of staff, and reiterated the current guidelines and approaches presented in the lectures. Survey data were analyzed using McNemar's test for paired and binary data. Results showed the agreement of all the staff in recognizing the utility of the module in standardizing their knowledge of current EBP guidelines on lifestyle modifications and blood pressure measurement procedures. The results also showed the enhancement of staff proficiency which might lead to efficient education of patients on effective HTN treatment and management protocol. This pathway has the potential to bring about social change by decreasing the incidence of patient noncompliance and improving patient health.

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Dedication

I am dedicating this achievement to my creator, Lord Almighty. For the strength He inputs in me to never quit but to get to the finish line - “To HIM be the glory forever”.

I am also dedicating this achievement to my children, Chelsea Onyinyechi and Themera Chinonso Ukomadu for their understanding even when it was difficult to give them the attention they deserve.

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Section 1: Nature of the Project

Introduction

High blood pressure or hypertension (HTN) is known as a silent killer because it is a leading cause of cardiovascular diseases such as heart failure, heart attack, and stroke, if not managed and treated (Centers for Disease Control and Prevention [CDC], 2016). In a survey done between 2007 to 2010, the American Heart Association (AHA) found that 78 million American adults in the United States, or 81.5% of the adult population, knew they were hypertensive, yet only 52.5% sought treatment to control HTN (AHA, 2017). The U.S. Preventive Services Task Force (USPSTF) reported that there were about 365,000 deaths attributed to HTN (USPSTF, 2016). Despite these statistics, HTN is preventable and manageable through pharmacological and non-pharmacological means (Marshall et al., 2016). The AHA suggested that HTN, a risk factor for CV events, can be changed with healthy lifestyle choices (Go et al., 2013). Its management and intervention require accurate blood pressure measurement to maximize and improve the safety of patients so complications are prevented (USPSTF, 2016). Furthermore, the task force stipulated that success of HTN management involves patient self-care, and family and community involvement. The 8th Joint National Committee (JNC 8) contains evidence-based practice (EBP) guidelines on how to manage HTN through lifestyle modifications that includes smoking cessation and weight loss through exercise and healthy diet by reducing sodium intake (USPSTF, 2016).

In this project, I focused on the role that nurses contributed to HTN management through the development and creation of an educational regimen for clinic staff. The module provided information on various ways to encourage patient and family participation in managing HTN. My overarching goal for the project was for treatment and prevention of complications such as cardiovascular accidents and even death. This doctoral project has the potential to create positive social change starting with the proper training of nursing staff on correct reading of blood pressure and utilization of current guidelines. By equipping nurses with current EBP guidelines, they could effectively communicate the correct strategies to help patients with self-management of HTN, and thereby prevent further complications of hypertension and its comorbidities.

Problem Statement

Patient noncompliance with health management, treatment, and control of high blood pressure remains a problem among healthcare professionals (Corbie-Smith, Thomas, Williams, & Moody-Ayers, 1999). It leads to a host of cardiovascular diseases (CVDs) and cerebrovascular accidents (CVAs), as well as other health complications (CDC, 2016). During my Doctor of Nursing Practice (DNP) practicum, patient noncompliance among patients who have HTN, was observed at a health clinic in southern Texas. This became evident because HTN-diagnosed patients were making repeat clinic visits with no health improvements and sometimes with CVA. Patients were also unaware of their treatment options based on their inquiries during clinic visits. Based on this observation, I used the terminology patient noncompliance with HTN

management and treatment options, and not non adherence. In a review by Brown and Bussell (2011), the authors reported that adherence refers to cases wherein patients were following treatment strategies after discussions and agreement with their healthcare professionals, while compliance is used in cases where patients may or may not be taking measures to keep their health on track but with no formal discussion of health options with their physicians or healthcare team. The latter case applies to the patients at the project study site as their failure to comply with treatment strategies seemed to be due to their unfamiliarity with current HTN standards of management and treatment. If medical administrators and nursing staff prioritize patient compliance with HTN management and treatment, then patients are more likely to view their diagnosis with more seriousness, and to adhere to current management and treatment strategies (Brown & Bussell, 2011; Terry, 2015). Complications, such as heart attack, stroke, myocardial infarction, renal failure, and sometimes death, could then be prevented, and the patient can still lead a healthy quality of life (Ioannidis, 2018).

Medical professionals, especially nurses, play a key role in the provision of patient health care and education (Terry, 2015). They are at the forefront of health care as they interact with patients starting at diagnoses until recovery. It is therefore important that nurses show compassionate care toward patients and be updated with current information on treatment guidelines, in HTN management. Not only should nurses be armed with the correct preventative and treatment strategies; they should also show an empathetic attitude toward patients so they can deliver the appropriate treatment

strategies and encourage the patients and their families in the process. In this project, I initiated staff education to provide health professionals with some guidelines to help them facilitate approaches for better management and control of HTN. These strategies would provide staff with a structure that would allow them to understand patient's behavior and views that may have contributed to patient noncompliance to HTN management and control. A more proficient nursing staff would allow for better responses to help patients adjust their behavior toward treatment. Through this, patient noncompliance toward HTN management protocol will be at minimum.

Purpose Statement

Proper diagnosis, treatment, and prevention of hypertension starts with correct identification of at-risk patients, then proceeds with targeting diagnosed patients with appropriate follow up and monitoring strategies. Specifically, correct identification starts with correct blood pressure monitoring. Diagnosed patients are then taught how to self-manage and monitor their condition based on current evidenced based practice (EBP) guidelines. These strategies take into consideration the attitudes and beliefs of patients and are dependent on current knowledge of healthcare staff, particularly nurses. Teaching staff about current EBP guidelines will provide them with the confidence to empower and encourage patients toward effective self-care. The project contributed to the resolution of the seeming gap in clinical practice, i.e. patient noncompliance to management and treatment of HTN, at a family clinic in southern Texas, where there was a high rate of patients who frequently visited the clinic due to uncontrolled blood pressure and related

health complications. By standardizing staff knowledge on current EBP guidelines based on JNC 8 and American College of Cardiology (ACC), the module equipped clinic staff to teach patients on effective self-management of their health condition, thereby minimizing patient noncompliance with health management, treatment, and control of high blood pressure.

The practice-focused question for this doctoral project was:

How did the implementation of an evidence-based educational module, based on JNC 8 and ACC guidelines, impact the knowledge of clinic staff regarding teaching patients how to self-manage their hypertension?

The purpose of this project was to use the educational module to standardize the knowledge of clinic staff so they were able to correctly identify what hypertension was, teach correct blood pressure monitoring to patients, and teach patients how to self-manage their disease through proper lifestyle modifications that are sympathetic to their lifestyle and cultural beliefs. By increasing the proficiency of clinic staff on these aspects of HTN treatment and management, this DNP project could help provide patients with the right understanding about their condition and learn the effective steps to become active participants in the self-management of their high blood pressure. According to Chang, Chen, Wu, and Liao (2017), proficient healthcare professionals are a good indication of an effective patient-centered care that is based on the active participation of patients with their own health and treatment.

Nature of the doctoral project

High blood pressure, the leading cause of CVA (CDC, 2016), needs to be controlled or managed in order to prevent unnecessary health complications including mortality. Its management can be possible by following EBP guidelines such as those formulated by ACC and JNC 8. These were the source of evidence for this project, and the creation of the educational module, in addition to information from peer-reviewed journals.

The project consisted of an educational regimen for staff members at a family clinic. I designed the project to standardize correct diagnosis of HTN among nursing staff, and increase their knowledge on the risk factors, required life-style modifications, and current EBP guidelines for recognition and treatment of hypertension. The face-to-face educational module featured the current JNC 8 and ACC guidelines for blood pressure measurement and management, including lifestyle modifications (see ACC, 2017; USPSTF, 2016). I conducted the educational module in a span of 2 days to accommodate the limited break schedule of clinic staff, and comprised of short lecture presentations, with handouts, and prepresentation, as well as postpresentation evaluation among the participants. Prepresentation responses reflected current knowledge by staff on HTN, extent of HTN information taught to patients, and staff protocol on blood pressure measurement. Postpresentation responses indicated the usefulness of the lecture regimen in updating staff knowledge on blood pressure measurement and HTN lifestyle modifications.

Overall, I utilized the project to standardize staff knowledge on correct blood pressure monitoring and effective patient self-management of HTN through appropriate lifestyle modifications. This could potentially impact patient participation in the treatment and management of their disease in the future. Increased patient participation, as encouraged and supplemented by clinic staff, could then translate to lower noncompliance, a common gap-in-practice problem among healthcare professionals with regard to HTN treatment and management (Corbie-Smith, Thomas, Williams, & Moody-Ayers, 1999).

Significance

The project had a positive impact on a number of stakeholders. Directly, it provided the clinic staff with current and evidenced-based knowledge on HTN management and treatment which will increase proficiency in providing good patient care. Indirectly and in the future, the project will benefit patients and their families toward the improvement and treatment of patient health condition. Staff educational training on current HTN guidelines would translate to improved patient health which can have reduced economic/financial consequences (see CDC, 2016).

Training nursing staff on current and effective communication of HTN management strategies can have a positive impact on the nursing staff and patient health. Nursing staff that are equipped with the right information will be more effective in their duties to teach patients to self-manage their hypertensive condition. For example, lack of knowledge on current blood pressure measurement levels leads to misdiagnosis of the

condition which can result to unnecessary consequences to the patients and their families (Handler, 2009). Effective staff communication can provide better compassionate care between staff and patient. It gains patient trust which can empower patients to perform proper self-management strategies on their HTN (Siegel, 2005).

The concept of this educational module may be applied to other clinical practice areas that want to improve healthcare-patient communication concerning health issues such as HTN. Regardless of clinic size, the practice should always reinforce current and innovative methods that improve staff competence and conduct of regular educational training is an effective way to improve proficiency. It also leads to better communication between patients and healthcare professionals which is one way to engage patients in actively participating in the treatment and management of their health condition.

Therefore, the implications of the educational regimen were improved communication between patients and healthcare professionals, which consequently affects patients' engagement toward the improvement of their HTN. When patients are more attuned to their self-care and management, then treatment becomes more patient and family centered so their safety is enhanced, and complications such as cardiovascular events and CVA are prevented (USPSTF, 2016). In fact, Tilter (2008) stated that it is important for patients and healthcare organizations to implement safe practices, such as early detection and prevention initiatives through nurses' knowledge enhancement, and effective communication in micro and macro levels (such as conferences, patient

acceptance to change), to prevent worsening of development of CVA in patients with high blood pressure.

Summary

The ACC and JNC 8 provides a current set of guidelines for the management and prevention of HTN. Nursing staff need to be updated on these EBP guidelines so they can effectively assist patients and their family in providing self-care to patients, and preventing other health complications from afflicting patients. One way for nursing staff to learn about HTN and its diagnoses and management is through education.

This section included the general overview of HTN and related health complications resulting from inadequate management of the condition. It also included a summary of the gap in practice in a family clinic in southern Texas where patients with HTN were reporting back to the clinic with health complications. Lack of a standardized measurement of blood pressure, and current knowledge of guidelines to manage HTN seem to be lacking. I created an educational module that provided current information on HTN that standardized measurement and diagnoses of blood pressure, outline HTN risk factors, symptoms and patient lifestyle modifications. The module provided a good foundation for nursing staff to encourage and empower patients to be pro-active in managing their condition. Section 2 includes the background and project description through presentation of literature research, explanation of project relevance to nursing practice, and discussion of my role.

Section 2: Background and Context

Introduction

Lack of compliance by patients to protocols on management, treatment, and control of high blood pressure was an observed problem at a family clinic in southern Texas. In addition, lack of current knowledge on HTN standard of care among the nursing staff, was also apparent at said clinic. I created an educational module, based on current JNC 8 and ACC guidelines to address this issue. The implementation of the module impacted the knowledge of clinic staff on ways to empower their patients to understand and self-manage their hypertension. Specifically, I created a module to standardize the knowledge of clinic staff so there is correct identification and monitoring of HTN, and current information in teaching patients about self-management of HTN through lifestyle modifications. In Section 2, I discuss the theoretical framework and previous research that I used to supported my educational module.

Concepts, Models and Theories

Hypertension is tagged as the leading cause of CVA in the world and should be taken seriously (AHA, 2017). Controlling HTN is important to prevent unnecessary complications and financial burdens. In order to effectively control high blood pressure, an asset assessment is required to identify the areas that need changes in affected individuals or groups (Springer& Evans, 2016). In line with the concept of asset assessment, the theory of planned behavior provides an additional framework for the development of this project. Together, the concept of need or asset assessment, and the

theory of planned behavior are the overarching foundation that shaped the educational module on HTN.

Concept of Asset Assessment

As stated by Springer and Evans (2016), the concept of assets assessment can help the healthcare educator understand how the environment influences the health needs of individuals and how each and every factor found within the environment contributes toward health management of the population. Understanding the effect of environmental factors on this population's health is necessary to strategize, plan, and implement a health literacy awareness program that will educate the healthcare professionals on identification of patients and factors that contributes to the development of HTN as well as create awareness of its management to prevent stroke disease (Springer and Evans, 2016). According to Hodges and Videto (2011), it is necessary for healthcare professionals to concentrate on understanding the influence of environmental factors in order to plan and design the care management of individual cases. In review, assessing the factors that could lead to the development of HTN will help in planning for its management and intervention. For example, Ovbiagel and Nguyen-Huynh (2011) stated that African Black men have a high stroke rate that is attributed to many factors including health disparities that exist due to differences in race and cultural beliefs, poverty, lifestyle choices, delay in seeking treatment, environmental factors, health accessibility, and of course, geographical regions and hereditary factors such as family history of hypertension or heart disease, mutation of DNA, and body mechanisms that predispose

an individual to different kind of disease prevalence. These factors should also be taken into consideration by medical professionals and patients so treatment and management plans for the disease will be more realistic.

The concept of asset assessment is already reflected at the Office of Disease Prevention and Health Promotion's (ODPHP) Healthy People 2020 program (Healthy People 2020, 2014). By understanding an individual's current lifestyle and beliefs, medical professionals are better able to assist patients on how to determine realistic and better options for changes in their lifestyle (Healthy People 2020, 2014). Patients are also better able to understand the importance of making lifestyle changes that may include management and control of high blood pressure, reduction in high cholesterol levels, control of smoking cigarettes, and teaching on healthy diet and good lifestyle behaviors. Patients who take such steps allow the program to carry out one of its goals which is to decrease and prevent risk factors for cardiovascular diseases (Healthy People 2020, 2014). Another program aim of Healthy People 2020 is the provision of guidelines based on CVD risk factors that provides standards that characterizes the health of Americans. The current standard depicts the United States as a nation with poor cardiovascular health – only 0.1% of the 12,744 participants have ideal health, 17.4% are classified as having intermediate health, and the majority, 82.5%, have poor cardiovascular health (Folsom et al., 2011).

Theory of Reasoned Action/Planned Behavior

The theory of planned behavior is closely associated with the theory of reasoned action. The latter theory pertains to the subjective norms of individuals regarding their behavioral response to their health; while the former refers to the individuals' attitude toward the behavior (Rural Health Information Hub, 2019). Based on these theories, I am suggesting that an effective HTN management and treatment plan should include changes in behavior of patients that take into consideration their preconceived attitudes. My suggestion follows Flynn et al. (2013) research where they stated that before designing an intervention for patients with HTN, their attitude toward management of HTN needs to be considered and addressed using behavioral intervention model that identifies gap in HTN management as this gap may hinder effectiveness of the management strategy. Additionally, Ryan (2009) reported that human attitude or lifestyle affects individuals' health. By changing individual attitudes, patients can develop behavioral changes that would have more effective impact toward health improvement.

This has been demonstrated in a qualitative study showing how a norm of a specific ethnic group affects their health condition and treatment. Peters, Aroian, and Flack (2006) reported that the African-American community possesses ethnicity-perceived HTN ideas that prevent them from practicing healthy lifestyle changes that prevent CVA. As a result, there is still a high rate of CVD caused by uncontrolled HTN among African-American men and women. Green, Kwok, and Durrington (2002) also stated that patients, regardless of ethnicity, who were taught HTN health guidelines

combined with the recommended drug (statin) had reduced high blood pressure and cholesterol to normal rate. Therefore, non-pharmacological amendments, involving changes in lifestyle, behavior, and attitudes, contribute to improved patient health (Ryan, 2009). It seems that for some individuals or groups, intervention is essential to teach them how to cope with healthy behaviors that will help them overcome some of their preconceived ideas that have contributed to their poor health condition. Intervention can be educational in nature, through health professionals or the patient's family, or both.

Intervention in patient's lives will also involve evaluating the clinicians' behaviors toward embracing health literacy in order to guide their patients in their disease management. Understanding the theory of planned behavior will enable the clinicians to evaluate themselves about their attitudes toward helping patients in embracing changes to modify their lifestyle. According to Hodges and Videto (2011), designing and implementing behavior changes, of both clinicians and patients, are needed to improve program effectiveness.

Relevance to Nursing Practice

Hypertension is a modifiable factor that if managed effectively will reduce the underlying effect and complication such as stroke (CDC, 2011). In a survey done from 2007 to 2010, the AHA found that 81.5% individuals knew they were hypertensive, yet only 52.5% got treatment to control their HTN. The association concluded that high blood pressure, the highest risk factor for cardiovascular events in United States affecting 78 million adults, can easily be changed with healthy lifestyle choices (AHA, 2016). In a

study conducted by Alkadry, Bhandari, Wilson, and Blessett (2011) in West Virginia, the authors concluded that lifestyle changes such as smoking cessation, regular medical checkups, and weight reduction, contributed to significant health improvements between study participants who have high blood pressure. Despite recognizing the important contribution of lifestyle modifications on HTN, some researchers also emphasize the equally important step of patient behavioral intervention toward HTN management. Lifestyle changes involve amendments that should stem from the patient themselves and their support group as well. Failure to encourage patients to participate actively in their HTN management activities could hinder the effectiveness of preventative measures to curb high blood pressure and its complications, especially in minority populations (Flynn et al., 2013). Therefore, it is beneficial for healthcare professionals to be proficient in this regard to make the implementation of treatment and management guidelines more successful.

Implementing a high blood pressure management toolkit enables nurses to disseminate knowledge on control and prevention of cardiovascular diseases in patients. It helps the nurses become aware of the complication of hypertension as the underlying cause of CVA and the damages it causes the patients including the financial burden it has on the nation (Flynn et al., 2013). The toolkit enables nurses and other clinicians to be serious in educating patients in the management and control of hypertension (CDC, 2016). Nurses can utilize and apply helpful information found in the module to effectively educate patients. An educational module can enhance their knowledge on

utilizing EBP to be better informed on their patients' lifestyle, modifiable, and non-modifiable factors in CVA prevention, management and control. Barriers of mistrust between patients and health professionals, and noncompliance of guidelines among patients can be lessened, if not eliminated, thereby reducing health disparities (Corbie-Smith et al., 1999).

Local Background and Context

My initial interest started with CVA when this health condition occurred among family and friends. Death of loved ones and/or debilitating health conditions that altered lifestyle were the consequences that resulted from CVA. Upon further investigation, I learned that the common thread that binds these personal cases together is high blood pressure and its relationship with stroke. Research further revealed that HTN is a modifiable disease that can be altered through lifestyle changes (Go et al., 2013). Furthermore, these lifestyle changes can effectively be implemented through education of both patients and medical professionals (Flynn et al., 2013; Marshall et al., 2016). Thus, I started the idea of designing an educational regimen.

I created the educational module for nursing staff at a family clinic in southwest Texas where I observed patient noncompliance with HTN care so that there were a number of patients who made repeat visits with HTN related complications. I also observed that there seems to be inconsistent or lack of standardized and current knowledge among staff on how to handle patients with HTN. The healthcare professionals in the clinic are made up of two nurse practitioners (NPs), four registered

nurses (RNs) and three licensed medical assistants (LMAs). I trained a total of nine clinic staff to utilize current evidence-based approach to update their knowledge on HTN, and to educate patients in participating in their disease management. Teaching staff a patient-centered approach in HTN management, will prevent health complications by overcoming the barrier of patient noncompliance.

Role of the DNP Student

As a result of my first-hand observations of the gap in practice at the family health clinic in Southern Texas, I saw the need for staff education on HTN management to standardize the care provided to patients. Patients who were newly diagnosed with HTN and those who come back with HTN complications seemed to have a nonchalant attitude toward their health. This was similar to the reports from other researchers who showed that for specific ethnic groups, such as African-Americans, there seemed to be trust issues between healthcare professionals and patients in terms of their therapeutic relationship. According to Corbie-Smith et al. (1999), there is a significant need for effective communication to gain back patient trust and break through health barriers. Following the recommendation of that study, I conceptualized an educational regimen that equipped nursing staff to effectively communicate with HTN patients. Furthermore, I developed and executed a training program for the clinic staff that assessed their current knowledge and practices toward their patients diagnosed with HTN. I set the goals for this educational program to include the standardization of care for nursing staff toward

HTN patients and the improvement of patient health through better participation in their own treatment regimen.

Summary

I outlined the theoretical concept used in the development of the educational regimen in Section 2. The concept of assets assessment is the foundation for the training program that I created to fill the lack of standard practice among clinic staff and the seeming apathetic attitude of the patients toward their diagnosis. I will outline the details of the training program, and the collection and analysis of data in Section 3.

Section 3: Collection and Analysis of Evidence

Introduction

I outlined in the first section that patient noncompliance to HTN management and treatment protocol is an on-going healthcare problem that could lead to severe complications that includes death. One way to curb this problem is to educate healthcare professionals on current EBP guidelines on HTN treatment and management that highlights lifestyle and behavior changes of patients and the reactiveness of medical professionals in engaging patients toward their self-care. I showed the concepts and theories that supported the development of the educational module in Section 2. In Section 3, I will review the practice-focused questions, then describe the sources of evidence, analysis and synthesis of the data from implementation of the educational module.

Practice-focused Question

At a family health clinic in southern Texas, I observed the lack of sufficient staff knowledge on treating HTN and repeat visits of patients with HTN related complications. These observations seem to point to a gap-in-practice related to inadequate patient HTN treatment and management education provision by staff. The practice-focused question that I used to guide this project was: How will the implementation of an evidence-based educational module, based on JNC 8 and ACC guidelines, impact the knowledge of clinic staff regarding teaching patients how to self-manage their hypertension?

The educational module helped standardize the knowledge of clinic staff about what HTN is and its complications, how it is monitored through correct blood pressure monitoring, and how to teach patients on self-management through lifestyle and attitude/behavior modifications. By doing so, staff proficiency is likely to improve, which can translate to quality care and teaching toward patient self-care of their HTN and can lead to better patient compliance toward HTN treatment and management.

Sources of Evidence

I reviewed literature for relevant information on HTN and the JNC 8 and ACC guidelines which provided foundation for the educational module. A description of the educational regimen for clinic staff then followed. These sources of evidence provided necessary information to increase staff knowledge on HTN information and self-management. Increased staff knowledge is more likely to improve nurse proficiency in equipping patients to be active participants in their health care and management. Improved nurse competency could then improve collaboration with patient and their family in terms of lowering blood pressure, and this could eventually reduce the chances of cardiovascular disease development (USPSTF, 2016).

The review of literature and the description of the educational module provided a structured picture of the sufficiency of the guidelines in empowering staff to teach patients about self-management of HTN diagnosis, thereby minimizing the problem of patient noncompliance. Lack of compliance by patients to HTN management has been documented to be an on-going health issue that leads to high CVA incidence, especially

within African men in the United States and in African nations (Adeloye, 2014; Howard, 2013). Therefore, clinicians need to utilize strategic planning that includes early detection of HTN and prevention initiatives through increased healthcare professional competency in enjoining patient and family participation in health management, to create positive health outcomes that includes lower blood pressure and prevention of HTN complications (Tilter, 2008).

Published Outcomes and Research

I searched the following databases for information on hypertension and the design of the training module: PubMed/Medline, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Cochrane Database of Systematic Reviews, and Ovid database. I used the following keywords for my search: *hypertension, blood pressure, cardiovascular diseases, cerebrovascular accidents (stroke), JNC-8 guideline, ACC guideline, management of hypertension, prevention of hypertension, lifestyle modification,* and *health promotion.* The search included articles, journals, reports and websites. Scope of the literature review ranged from the years 1998 to the current year, 2019.

Hypertension management guidelines. There were two HTN guidelines that acted as primary sources of EBP information for the module – JNC 8 and ACC. These two groups share the common goal of improving cardiovascular health that includes prevention of HTN (Page, 2014). The JNC is made up of the National Committee on Prevention, Detection, and Treatment of High Blood Pressure that formulates current

information on HTN only (Sheps, 1999). The most current iteration of the committee is JNC 8 and stipulates the following: blood pressure management for prehypertensive to hypertensive individuals through health education and lifestyle changes that is comprised of smoking cessation, control of blood glucose and lipids, dieting through dietary approaches to stop hypertension (DASH), reducing intake of sodium to 2,400 mg/day or less, moderate alcohol intake, moderate to vigorous activity (with stipulation of 3–4 days a week; 40 min per session; Abel et al., 2015). Additionally, JNC 8 specifies that older patients (55 years or older) should be treated with greater risk for HTN so their blood pressure reading should be lowered to 115/75mmHg instead of the normal range. It is recommended by JNC 8 that providers prescribe anti-hypertensive drugs to patients who have complications, such as diabetes and chronic kidney disease, to lower blood pressure to <130/80mmHg. On the other hand, ACC is a non-profit medical association so compared to JNC 8, the ACC is a bigger organization with wider scope that includes cardiovascular health, in general (Gibbons, Smith and Antman, 2003). With regard to HTN, ACC also makes similar recommendations as JNC 8 when it comes to controlling blood pressure. ACC recommends both non-pharmacological intervention such as increased physical activity, healthy diet via DASH, weight loss, and pharmacological treatments, as well. Table 1 presents a general summary of both guidelines.

In both of these guidelines, it is recognized that improvement of patient health relies on their good motivation and positive attitude to comply. Also, JNC 8 and ACC also recognize that if patients have a good experience from and communication with

healthcare professionals about their high blood pressure, then they are likely to follow the guideline and show health improvements (CDC, 2016).

Table 1

General summary of JNC 8 and ACC guidelines description

Summative recommendations	JNC 8	ACC
Non-pharmacological treatment: Health education & lifestyle changes:		
Cessation of smoking	✓	✓
Control of blood glucose and lipids	✓	✓
DASH diet	✓	✓
Reduced intake of sodium to less than 2,400 mg/day	✓	✓
Moderate intake of alcohol	✓	✓
Moderate to vigorous daily activity of 3 to 4 days a week	✓	✓
Pharmacologic treatment:	To patients who have complications, such as diabetes and chronic kidney disease	To all patients especially to those with complications

Blood Pressure. According to the CDC (2016), a normal or healthy blood pressure is a systolic blood pressure of less than 120mmHg, and diastolic pressure of less than 80mm Hg. Prehypertension falls within the systolic range of 120–139mmHg, and diastolic pressure of 80–89mmHg. Hypertension is classified for systolic pressure of 140mmHg or higher, and diastolic pressure of 90mmHg or higher. The AHA further categorizes hypertension based on stages. The table from AHA (2017) below shows the stages, as well as the normal and prehypertension levels (see Table 2).

Table 2

Classification of Blood Pressure

Blood Pressure categories	Systolic mmHg #		Diastolic mmHg #
Normal	Less than 120	And	Less than 80
Prehypertension	120 – 129	Or	Less than 80
High Blood Pressure (Hypertension Stage 1)	130-139	Or	80-89
High Blood Pressure (Hypertension Stage 2)	140 or higher	Or	90 or higher
Hypertensive Crisis (Emergency care need)	Higher than 180	Or	Higher than 120

In a supplementary report by James et al.(2014a), the researchers included some information and suggestions on measurement of blood pressure. The supplement recommended the use of the oscillometric method to determine blood pressure in clinical settings, provided that the instrument is properly calibrated and validated carefully with manual sphygmomanometers. The oscillometric method uses an oscillatory device that "produces a digital readout and work on the principle that blood flowing through an artery between systolic and diastolic pressure causes vibrations in the arterial wall which can be detected and transduced into electrical signals" (Berger, 2001, page 919).The following measures were also outlined by James et al. (2014b) to minimize incorrect readings and diagnoses:

- Measurements should be performed in a "quiet and relaxed atmosphere,"
- Patients should be "seated comfortably for at least 5 minutes in a chair, than on an exam table,"

- Patients' feet should be flat on the floor, back should be supported, and "arm supported at heart level,"
- Measurement should be taken on "bare upper arm, with appropriate-sized cuff whose diameter covers 80% of the mid-upper arm circumference,"
- Patients should refrain from "caffeine, cigarettes and physical activity for at least 30 minutes before measurement,"
- Patients should empty their bladders or encouraged to do so, before taking measurement,
- Two to three measurements should be taken, then average recorded,
- If first visit, blood pressure should be taken from both arms, then the side with the higher reading should be used for subsequent measurements (James et al., 2014b, p. 138)

In rare cases, a high blood pressure reading might occur due to white coat syndrome. This occurs when patients register a higher than normal blood pressure reading only at the doctor's office, where doctors or healthcare professionals wear white laboratory coats (Johnson, 2018). Though difficult to diagnose, it is better to take several measurements at the clinic, and/or the patients may be referred somewhere else (like a pharmacy) or be asked to use an at-home blood pressure monitor. Regardless of these alternatives, the goal is to take several readings which the patient can then report back to their doctor. Based on the results, proper diagnosis and recommendations can be made by the primary care physician.

Lifestyle Modifications. Treatment of HTN revolves around reducing the blood pressure to lower, if not normal, levels. JNC 8 and ACC both espouse the strategy of blood pressure reduction through lifestyle modifications. It has been documented to be a helpful way of controlling HTN (Bunker, 2014). I am describing the succeeding sub-sections to support the efficiency of these strategies in lowering blood pressure, when applied properly and regularly.

Diet. Adjusting one's diet is at the top of the list of changes that the guidelines suggest. This includes a diet that is rich in vegetables, fruits, low-fat dairy products, and lean protein. Research has shown that a diet that is low in sodium, high in fruits and vegetables, and low in fat, proved to be effective in preventing HTN (Rigsby, 2011). The DASH diet not only provides a good way to accomplish these dietary adjustments, but it also lowers sodium intake of individuals (Appel et al., 2011). DASH involves sodium reduction to 2,300 mg per day, increased fruit and vegetable intake, reduced consumption of total saturated fat and cholesterol (Saneei, Salehi-Abargouei, Esmaillzadeh and Azadbakht, 2014). Dietary adjustments toward heart healthy foods, that are low in sodium and bad cholesterol but rich in fiber, combined with other lifestyle changes discussed in succeeding paragraphs, have been reported by Petkeviciene et al. (2014) to prevent HTN and lower the risk of high blood pressure.

Physical Activity. Research has shown that increasing physical activity reduces the risk of HTN. Conversely, sedentary lifestyle characterized individuals with high blood pressure, and had been associated with development of chronic diseases and

illnesses (Tussing-Humphreys, et al., 2013). Lifestyle modification through increased physical activity involves moderate to intense exercise for at least 30 minutes a day, for most days of the week (AHA, 2012). The ACC reported that physical activities that included aerobic, dynamic resistance and isometric exercises, performed for 90 to 150 minutes a week can reduce blood pressure by 4mmHg (ACC, 2017). The same research results were also reported by Kokkinos et al. (2014) where the researchers showed improvement of cardiorespiratory fitness through daily physical activity by the patients. Additionally, regular and daily physical exercise not only improved blood pressure, it also contributed to a person's well-being and improved their life expectancy (Baak, 1998).

Weight loss. The ACC (2017) reported that a 1 kg reduction in body mass led to a 0.5 mm Hg reduction of blood pressure. But weight loss, paired with DASH diet and regular exercise, resulted to greater blood pressure reduction, and more improvements in vascular and autonomic function, compared to study participants who were in DASH diet alone (Blumenthal et. al, 2010).

Alcohol consumption. Alcohol consumption is a modifiable risk factor related to HTN. According to the ACC guideline, reducing intake of alcohol to two or fewer standard drinks for men, and one or fewer for women per day, will lower blood pressure by 4mmHg (ACC, 2017). Research has shown that daily alcohol intake that is more than what is stipulated in the guideline led to increase in blood pressure (Briasoulis et al., 2012).

Smoking cessation. Smoking is another important modifiable risk factor for HTN. It leads to atherosclerosis or the narrowing of the arteries due to the destruction of the walls of the pulmonary blood vessels. Atherosclerosis then decreases flow of oxygen to the different organs, including the heart, which can lead to angina, CVA, heart attacks and congestive heart failure (NHLBI, 2010). With the development of atherosclerosis comes HTN. Therefore, smoking cessation leads to improved blood pressure.

Evidence Generated for the Doctoral Project

JNC 8 and ACC HTN management guidelines were the primary sources of information in developing the HTN educational module for clinic staff. I created the module to standardize staff knowledge on current information about HTN, correct procedures for taking blood pressure, and current EBP guidelines to teach patients how to self-manage HTN through lifestyle modifications. I developed the module to eventually provide clinic staff with enough information to provide encouragement to patients so they can be more pro-active about HTN self-management.

Participants. I presented the module to all the clinic staff at a health clinic in southern Texas. The healthcare professionals in the clinic were made-up of two nurse practitioners (NPs), four registered nurses (RNs) and three licensed medical assistants (LMAs). I trained a total of nine clinic staff so they can understand and utilize EBP approach to educate their patients in participating in their disease management. To accommodate the work schedule of the staff, I conducted the training in two different days, and during short staff breaks. I firmly believe that teaching staff a patient-centered

approach in HTN management will prevent health complications by overcoming the barrier of patient noncompliance.

Procedures. The educational module was comprised of two lecture presentations on HTN, current JNC 8 and ACC guidelines on lifestyle modifications, and proper blood pressure measurement (Appendix A and B). JNC 8 and ACC guidelines provided current standards of care on high blood pressure management whose content validity and effectiveness have been already reported in literature (Abel et al., 2018; ACC, 2017; AHA, 2017; Bunker, 2014; CDC, 2011; Folsom et al., 2011; Flynn, 2013; Gibbons, Smith & Antman, 2003; Healthy People, 2011; James et al., 2014a; Marshall et al., 2016; Page, 2014; Sheps, 1999). I derived the guidelines used in the module from JNC 8 and ACC. I also gave out handouts were also given out to help remind clinic staff about the information presented at the lectures (Appendix C and D). The module also included pre- and posttest surveys that evaluated current knowledge and practices of staff, and reiterated the current guidelines and approaches presented in the lectures (Appendix E, F, G and H).

I created the lecture modules using PowerPoint presentations derived from EBP guidelines as stipulated in JNC 8 and ACC. It was a series of 30-minute presentations presented in two different days to accommodate the short break periods of staff. The first day of lecture contained current facts on HTN and the current JNC 8 and ACC guidelines (Appendix A). It emphasized JNC 8 and ACC guidelines on lifestyle modifications that were documented to be effective in lowering blood pressure. The second day focused on

proper blood pressure screening and a short review of the guidelines (Appendix B). A separate presentation on blood pressure measurement was performed to emphasize the importance of correct blood pressure readings to minimize or prevent incorrect diagnosis.

I created pre- and postsurvey evaluation questions that were answerable by “Yes” or “No”. Questions for lecture on day one revolved around two general themes based on the EBP guidelines. Appendix E and F show that the first set of questions was about general information on and complications of high blood pressure (questions 1 to 3), and the second set was on current HTN guidelines on lifestyle modifications (questions 4 to 12). Questions for day 2 included some review questions on HTN (questions 1 and 2), but most of the inquiries were on measurement procedures of blood pressure by staff (questions 3 to 8) (Appendix G and H).

Protections. I submitted the educational regimen on HTN management and control for health care professionals for IRB approval following Walden University guidelines, before initiation. I treated data and other relevant information from the staff survey with confidentiality and anonymity. Each recipient was requested to fill out a consent form outlining the voluntary nature of their responses and the confidentiality of their answers. Response questionnaires were also not signed nor assigned names. I stored study results electronically in a desktop computer, and will keep them in a secure location (locked drawer in a locked office) for five years, based on IRB requirements. After which time, I will erase and electronically destroy all data. I also took security measures so that the device where data was stored was password protected and accessible only to me.

Analysis and Synthesis

I processed and summarized collected data using the Microsoft Excel computer program. I used frequency analysis of counts to provide a summary of answers. Responses which were in “Yes” or “No” form was binary in nature. Additionally, survey results were dependent, because pretest and posttest responses were paired data that came from the same group who answered survey questions at different time frames. As such, I used the McNemar Test as the appropriate non-parametric test for paired, binary data (Triola, 2010). Test results provided a glimpse of the usefulness of the educational module on the knowledge acquired by clinic staff in teaching patients to manage their HTN, and in obtaining correct blood pressure measurement.

Summary

I outlined the review of related literature on HTN, and the JNC 8 and ACC guidelines which were the bases for the educational module, in Section 3. The module will contribute to the complex issue of patient noncompliance on HTN management and treatment strategy by equipping clinic staff with current EBP knowledge on HTN and lifestyle modification guidelines. Additionally, this section presented the description of procedures of the educational module, explained the study participants, and reported the ethical considerations relevant to data collection. I also described data analysis. The next section provides a description of the study results and discussion of its implications with regard to the study purpose.

Section 4: Findings and Recommendations

Introduction

I developed the educational module in response to the local problem observed at a health clinic in southern Texas. There are a high number of patients who frequently visit the clinic due to uncontrolled blood pressure and related health complications including CVA. Because of my literature search during the course of my DNP program, I learned that HTN is a modifiable disease that can be altered through lifestyle changes (Go et al., 2013). Moreover, lifestyle modification can be effectively implemented through education of patient and healthcare professionals (Flynn et al., 2013; Marshall et al., 2016). By standardizing staff knowledge on current EBP guidelines based on JNC 8 and ACC, the educational module can equip clinic staff to teach patients on effective self-management of their health condition, thereby minimizing patient noncompliance with health management, treatment, and control of high blood pressure. Therefore, I developed an educational module that answers the following practice focused question: How will the implementation of an evidence-based educational module, based on JNC 8 and ACC guidelines, impact the knowledge of clinic staff regarding teaching patients how to self-manage hypertension?

I expect the module to eventually contribute to the resolution of the issue of patient noncompliance on treatment and management of HTN by educating the clinic staff, first and foremost, on current EBP guidelines. I expect the staff to transfer this knowledge to the patients to self-manage their health condition more effectively.

The educational module consisted of a series of lecture presentations and a corresponding set of survey questionnaires. Both were conducted for 2 consecutive days. In each day, a set of pre- and postlecture surveys were presented to nine clinic staff who responded to close-ended questions answerable by “Yes” or “No.” For the first day of lecture and surveys, there were 12 questions that pertained to staff knowledge on HTN information and HTN guidelines on lifestyle modifications. On the second day, there were eight questions that mostly dealt with staff competence on blood pressure measurement procedures. Survey results were binary variables, and I summarized and described them using actual counts and percentage analysis. I utilized the McNemar’s test for paired and binary data on the pre- and postlecture responses to determine probable contribution of the module on staff knowledge on HTN, current guidelines and blood pressure measurement procedures.

Findings and Implications

There were nine participants from a south Texas health clinic who took part in the program which included two NPs, four RNs and three LMAs**.** Results of the pre- and postmodule survey interview are presented in Tables 3 and 4 and are described based on staff knowledge on general information on HTN, current HTN guidelines, and blood pressure measurement procedures. The asterisk (*) signifies statistically significant differences, while (na) and (ns) signify non-significance.

Table 3

Survey results from day one module presentation (N = 9)

Questions	Response	Pre	Post	p-value
1. Staff explanation of HTN and its complications				0.008*
	Yes	0%	100%	
	No	100%	0%	
2. Staff explanation of BP measurement guidelines				0.013*
	Yes	11%	100%	
	No	89%	0%	
3. Staff knowledge on modifiable & non-modifiable lifestyle changes				0.074 (ns)
	Yes	44%	100%	
	No	56%	0%	
4. Staff encouragement of patient involvement in HTN management				0.041*
	Yes	33%	100%	
	No	67%	0%	
5. Staff explanation to patients about high sodium intake in diet				0.008*
	Yes	0%	100%	
	No	100%	0%	
6. Staff reminder to patients about regular exercise and weight monitoring				0.013*
	Yes	11%	100%	
	No	89%	0%	
7. Staff reminder for patients to call for emergency if BP is high				0.008*
	Yes	0%	100%	
	No	100%	0%	
8. Staff reminder for patients to see doctor regularly				0.013*
	Yes	11%	100%	
	No	89%	0%	
9. Staff teaching patients about regular schedule of prescription intake				0.074 (ns)
	Yes	44%	100%	
	No	56%	0%	
10. Staff teaching patients to avoid salty & processed foods				0.041*
	Yes	33%	100%	
	No	67%	0%	
11. Staff teaching patients about DASH diet				0.013*
	Yes	11%	100%	
	No	89%	0%	
12. Staff explanation to patients about smoking cessation				0.074 (ns)
	Yes	44%	100%	
	No	56%	0%	

Staff knowledge on HTN information

The first three questions from Table 3 were inquiries to staff about their baseline knowledge on HTN. With the exception of Question 3, results reveal that pre- and postlecture answers were significantly different with *p*-values ranging from .008 and .013 (Questions 1 and 2, respectively). The results seem to indicate that most of the staff learned important HTN information from the module. Only one of the NP and one of the four RN were explaining to patients the blood pressure measurement guidelines, before module presentation.

Question 3 showed a statistically non-significant result ($p = .074$). Question 3 was about staff teaching patients about modifiable and non-modifiable lifestyle changes. The test result seems to indicate that most of the staffs were not teaching patients about these concepts, with the exception of both NP and two of the four RN. However, staffs were unanimous in their agreement that they need to talk to patients about these topics, after hearing the lecture module.

HTN guidelines on lifestyle modifications

Staff knowledge on current HTN guidelines were derived from pre- and postlecture surveys conducted during the first day of module presentation (Table 3). Of the nine questions that pertain to patient teaching on lifestyle modifications, seven showed statistically significant results between pre- and postmodule survey questions (*p-values* ranging between .008 and .041). Questions 4, 5, 6, 7, 8, 10, and 11 pertained to patient involvement in HTN management, staff teaching on high sodium in diet, regular

exercise and weight monitoring, emergency call in high blood pressure event, regular doctor check-up, avoidance of salty and processed foods, and knowledge about the DASH diet, respectively. Some of the NPs and RNs answered affirmatively on these prelecture questions. Nonetheless, after the lecture presentation, the staffs seem to have gained more knowledge from the module about the importance of discussing these aspects to patients.

However, the results also revealed two questions whose answers were not statistically significant: Questions 9 and 12 ($p>.05$), as shown in Table 3. For these questions, the staff seemed to be already discussing these topics with their patients even before module presentation. These topics include regular schedule of prescribed medications (Question 9), and smoking cessation (Question 12). For these questions, the RN staff were the ones who answered affirmatively to these premodule questions.

Staff competence on blood pressure measurement procedures

Survey responses from the second day of module presentation which focused on guidelines for measuring blood pressure are presented in Table 4. Pretest results yielded baseline knowledge of staff regarding blood pressure measurement procedures. The first two questions were inquiries to staff about their baseline knowledge on HTN. Results reveal that pre- and postlecture answers were significantly different with *p-values* ranging from .008 and .023 (Questions 1 and 2, respectively). The results seem to indicate that most of the staff learned important HTN information from the module.

Table 4

Survey results from Day 2 module presentation (N = 9)

Questions	Response	Pre	Post	p-value
1. Staff explanation to patients about HTN danger				0.008*
	Yes	0%	100%	
	No	100%	0%	
2. Staff knowledge on current BP guidelines				0.023*
	Yes	22%	100%	
	No	78%	0%	
3. Staff knowledge on manner of BP measurement				0.008*
	Yes	0%	100%	
	No	100%	0%	
4. Staff action on measurement of patient weight before BP procedure				na
	Yes	100%	100%	
	No	0%	0%	
5. Staff utilization of proper BP cuff, dependent on weight				1.00 (ns)
	Yes	89%	100%	
	No	11%	0%	
6. Staff knowledge about white coat HTN				0.023*
	Yes	22%	100%	
	No	78%	0%	
7. Staff teaching patients about regular monitoring of BP at home				0.013*
	Yes	11%	100%	
	No	89%	0%	
8. Staff reminder for patients to call for emergency if BP is high				0.008*
	Yes	0%	100%	
	No	100%	0%	

Four of the six questions that pertain to measurement procedures showed statistical significance: $p = .008$ for Questions 3 and 8; $p = .013$ and $p = .023$ for Questions 7 and 6, respectively (Table 4). Staff responses to Question 3, in particular, indicated a possible source of erroneous blood pressure reading. All of the clinic staff admitted that they are not encouraging patients to be calm, to sit down and to refrain from talking when taking their blood pressure reading. The same trend was also apparent on

the topic of telling patients to call for emergency if cases of elevated blood pressure (Question 8). For Questions 6 and 7, only the NP provided affirmative responses before the presentation of the module. However, postmodule responses by all staff were all affirmative for Questions 3, 6, 7 and 8 which signifies that staff gained more information about these topics from the module I presented.

The other two questions on measurement procedures dealt with the weight measurement before blood pressure measurement (Question 4) and the utilization of proper cuff that is dependent on weight (Question 5). These two questions resulted to statistical non-significance between answers from pre- and postmodule survey, as shown in Table 4 ($p > .05$). Specifically, Question 4 showed no difference in staff responses before and after module presentation (Table 4). Results from these questions seem to indicate that staff did not learn any new information about these topics because they were already performing these on the patients.

In summary, all respondents answered "Yes" to all the survey questions at the postlecture evaluation. The trend was true for both days. This seems to indicate that the module provided the clinic staff very helpful information about HTN, current guidelines on lifestyle modifications, and blood pressure measurement procedures. The results from prelecture survey provided a glimpse of the staff's level of understanding with regard to HTN and blood pressure measurement. Even though some staff, primarily some NP and RN, were already providing some current HTN information and guidelines to patients, the practice was not consistent throughout. Because of the module, however, the staff

garnered a semblance of the proper standard practice that medical professionals ought to provide to patients with HTN.

An unanticipated, yet welcome, outcome of the project was the revelation of two particular staff who were knowledgeable about some information and practice involved in HTN management. Specifically, an NP and an RN consistently showed competence about HTN treatment and management. Clinic administrators should utilize this information in future decisions involving health education and management. They should consider these personnel as assets in their facility, especially toward health education and patient empowerment.

Another unanticipated, yet welcome, outcome of the survey was the knowledge that the majority, if not all, of the staff are following two protocols correctly in terms of blood pressure measurement procedure: they are taking patient weight before blood pressure measurement, and they are using blood pressure cuff depending on weight of the patient. It is reassuring that these protocols, based on JNC8 and ACC guidelines, are already being followed, even before module presentation. However, despite this, a number of the EBP protocols regarding blood pressure measurement were new information for staff. Thus, most of them answered affirmatively on the questions related to proper measurement procedures after module presentation.

The module provided useful and sufficient information to the clinic staff that will be very useful in teaching HTN patients on how to manage their condition. Additionally, the module provided an avenue for staff to determine the correct way to measure blood

pressure. Establishing an accurate reading is important in providing correct diagnosis. With the right diagnosis, both patients and medical professional can utilize current guidelines in managing HTN. Improvements in staff knowledge as provided by the module will translate to increased proficiency which can be transferred onto patients via the right information on self-management of HTN. The knowledge transfer will then empower patients to comply with HTN treatment and management protocols. Thus, proficient healthcare professionals can contribute to patient noncompliance which can then improve patient health condition.

Recommendations

Several researchers have reported on the effectiveness of patient and healthcare professional education as an effective method by which EBP guidelines such as lifestyle modification can be explained (Flynn et al., 2013; Marshall et al., 2016). I concur with this finding as demonstrated in this educational module where staff acknowledged the usefulness of the lecture and handout in updating their knowledge about HTN, current JNC 8 and ACC based guidelines and proper blood pressure measurement procedures. Therefore, I recommend the use of the two modules as part of the yearly in-service education for increased competency of clinic staff. Staff training can be directed to current staff who will benefit from getting updated information on how they can better assist HTN patients to self-manage their health. For new personnel, it should be part of their orientation packet, in order for them to receive current standard of care that exhibits

EBP guidelines that follow national standards such as those published by the CDC (CDC, 2014).

I further recommend that clinic staff should conduct follow-up monitoring with patients to determine if transfer of information from staff to patients was efficiently performed. This can also be done during each patient's subsequent clinic visit, where medical professionals can ask patients if they recall health information that was initially given them, and if they have further concerns as far as managing their health condition is concerned. This form of good and open communication about HTN should be encouraged between patients and health professionals so that patients will be more likely to follow and comply with the EBP guidelines, and eventually show health improvements (CDC, 2016).

Strength and Limitation

The staff acknowledged the usefulness of the modules in establishing the correct standard of care in the clinic toward HTN patients, and in reinforcing some practices carried out by a few of them. I attribute the positive sentiment of the staff toward one strength of the module, which is its logistics. Instead of performing the module for one day, which could have potentially lasted for hours, I did two modules in two days. Each module was presented for about an hour each. This provided me enough time not only to conduct the surveys and lectures/handouts, but also to interact with the staff for additional observation. The staff was appreciative of the module logistics because it did not intrude into their precious, yet brief, break periods.

There are also project limitations that I perceive. One of these includes the small number of participants in my project. Even though there is only nine clinic staff who participated in my surveys, I compensated by making sure that I interacted and communicated with my participants well. Also, I did not encounter difficulties in the data gathering, as the small study size worked well for me as a researcher.

Another study limitation is the lack of direct measure of patient compliance to HTN treatment and management guidelines. My main assumption in the educational module is that increased staff competency through their education and training will lead to increased patient participation and compliance to self-manage their disease. The module is then expected to contribute to eventual health improvement for patients. The success of this pathway has been documented in other investigations (see Flynn et al., 2013; Marshall et al., 2016), and I attempted to contribute to this endeavor through the development of the educational module for the healthcare providers at a south Texas clinic.

Overall, the project was successful in establishing standards of care that is based on current EBP guidelines among health professionals at a south Texas clinic. The project has achieved and fulfilled the practice-focused question, “How will the implementation of an evidence-based educational module, based on JNC 8 and ACC guidelines, impact the knowledge of clinic staff regarding teaching patients how to self-manage their hypertension?” It has revealed useful information for administrators and other researchers to build upon. Future educational modules should capitalize on the strength of this project

by retaining this module's EBP-based guidelines and its duration. Future modules should improve upon the limitations of this module by increasing the number of staff participants who will undergo the training, and enjoining more clinics to undergo educational training on HTN to improve competency of health professionals to achieve improvements toward patient health.

Section 5: Dissemination Plan

The educational module demonstrated its utility in increasing the competency of the clinic staff and standardizing knowledge on HTN and improving blood pressure management techniques among the clinic staff. Both results have the potential to increase patient knowledge about their health condition, and overall patient health. Because of the positive results of the module, the clinic in southern Texas, where I implemented the project, confirmed that the module will continue to be implemented in their clinic for new and current staff, to standardize their HTN practice of care. Even though I will not be responsible for executing future modules in said clinic due to logistical constraints in my work schedule, they provided verbal confirmation that the JNC 8 and ACC guidelines will be taught to patients via handouts. The clinic will also implement follow-up care to determine patient compliance, oversee health improvement and prevent health complications. Overall, the clinic realized the importance of staff training and education based on the positive results from my module, so the administrators are going to integrate continuing education into their organizational protocol.

I also plan to present my study results in conferences organized by healthcare professionals such as those by the American Nursing Association and Texas Nursing Association, where I am a member. I believe that my study results will encourage fellow nurse professionals to communicate effectively with HTN patients to prevent complications that result from patient noncompliance to treatment and management of high blood pressure. According to Peters, Aroian, and Flack (2006), effective

communication between healthcare professionals and patients have been successful in breaking the effect of some cultural beliefs that were not helpful in controlling HTN among the African Americans who participated in their study. Because of competent nurses who treated the African American study participants, they were able to adapt the lifestyle changes that were helpful in controlling their HTN. Healthcare professional competency can be achieved through educational training that is similar to the module I developed in my project.

I also intend to publish my study results in the journals and magazines of the World Association of Academic Doctors, an organization of which I am a member. The publications will provide more exposure to fellow healthcare professionals on the issue of patient noncompliance regarding HTN, and its prevention via positive communication between patients and healthcare professionals.

I also intend to submit a research proposal to organizations such as the CDC, National Institute of Health (NIH), AHA, and Association of State and Territorial Health Officials to replicate the project and expand its scope. These organizations have preexisting programs on stroke monitoring and prevention that are in line with the guidelines that I utilized in my project. In the proposal that I will submit, I will expand my study procedures to include investigation into more clinics on healthcare professional knowledge on HTN guidelines and blood pressure monitoring. I would also like to expand the scope of the proposal to include patient response to staff education and training. Through these future proposals, I can quantify staff competency and its impact

on patient response and compliance based from a bigger study population. Study results then can be more representative of a larger community of patients with HTN

Analysis of Self

My journey in this DNP program has been a great experience since the beginning of the program. As a scholar, it has helped me realize my strengths and shown me how to work with my weaknesses. Admittedly, at the beginning of my degree, I did not realize the amount of work needed to complete the program till I started my DNP project. The challenges from the project were sometimes daunting but I was able to plow through because I realized that being a scholar and an agent of change requires a lot of effort and determination on my part. Therefore, I put off social distractions and adjusted my work schedule so that I could devote more time to fulfilling the academic demands of the program. I also did not hesitate to seek consultation help from mentors, who assisted me with (seemingly insurmountable) issues on statistics and writing. With my perseverance, I was able to understand the areas I need to work on and continue to work through the challenges that are a part of my DNP program/education.

As a project manager, I tried to foresee and plan for areas of possible challenges to make project implementation feasible. For example, in determining the duration of the module, I had several consultations with the administrator and the staff about their work and break schedule so I can better consider the convenient and appropriate times for them to participate. By listening to their concerns and communicating with them, we were able

to coordinate a common time that benefits all concerned parties. This open line of communication continued on throughout my module implementation until now.

As a practitioner in charge of the educational module I created, I had the chance to delve more deeply into the issue of HTN, stroke and patient lifestyle modifications that can create a positive impact on a patient's life. Because of my exposure to this research topic, I have decided to be more proactive in healthcare issues and contribute to change certain healthcare practices that will improve cardiovascular health, in general. One way for me to accomplish this is through my delegate position within the Texas Nursing Association where I can collaborate with local nurses in the state on issues of staff and patient HTN education and management.

Overall, the challenges I faced to complete my DNP project were all worth it because I gained self-confidence in my ability to solve a problem. I was able to pinpoint an issue and conceptualize a sound resolution of the problem and see the project to its fruition. My perseverance to find solutions to the problem I encountered during the project and writing process gives me the confidence to forge ahead to pursue my profession. I also grew in knowledge about the HTN problem and would like to devote time to research more on the link between staff competence and education and patient compliance to HTN treatment and management, in the near future.

Summary

My staff educational module on current HTN guidelines and blood pressure measurement protocol provided a standardized set of practices for the clinic staff at a

southern Texas family health facility. Investigation by other researchers revealed that an increase in staff competency will help build effective communication and relationship with patients, especially those with HTN (Ogedegbe et al., 2009). This beneficial cycle will lead to patients' improved health condition and prevention of unnecessary complications.

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Appendix A: HTN Management Presentation for Clinic Staff (Day 1)

STAFF EDUCATIONAL MODULE ON HYPERTENSION MANAGEMENT & CONTROL BASED ON JNC 8 & ACC GUIDELINES

BY
CHINYERE UKOMADU

MSN, Walden University (2012)
BS, Walden University (2010)
Project Submitted in Partial Fulfillment
Of the Requirements for the Degree of
Doctor of Nursing Practice
Walden University
May 2019

PROGRAM OVERVIEW

- Blood Pressure
- Normal Blood Pressure
- Hypertension
- Causes of Hypertension
- Symptoms of Hypertension
- Risk Factor of HTN
- Complications of Hypertension
- JNC 8 & ACC Lifestyle Modification
- JNC Hypertension Guideline Algorithm

WHAT IS BLOOD PRESSURE?

- Blood pressure is the force of blood against the walls of arteries.
- Blood pressure rises and falls throughout the day.

(CDC, 2016)

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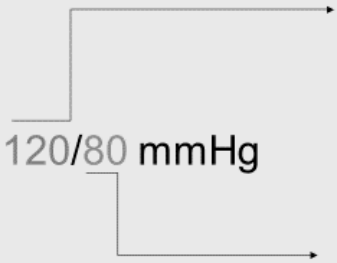
WHAT IS NORMAL BLOOD PRESSURE?



Systolic pressure (top number) represents the force that occurs when the heart is pushing the blood out of the heart into the arteries.

Diastolic pressure (bottom number) represents the pressure in the arteries when the heart is filling up with blood (i.e., the peripheral arterial tone).

(CDC, 2016)

Page 4

HYPERTENSION

Stage of Hypertension	Blood pressure	General Recommendation
Normal	Normal BP (BP <120/80 mm Hg)	Encourage healthy behaviors and lifestyle modifications to keep blood pressure in normal range.
Pre-Hypertension	Elevated BP (BP 120–129/<80 mm Hg)	Patient has an increased risk of future hypertension. Suggest that the patient make lifestyle modifications and regularly monitor blood pressure.
Stage I Hypertension	Stage 1 Hypertension (BP 130–139/80-89 mm Hg)	Patient has hypertension and should seek medical care.
Stage 2 Hypertension	Stage 2 Hypertension (BP 140/90 mm Hg)	

(AHA, 2017)

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CAUSES OF HYPERTENSION

- High sodium intake
- Aging
- High cholesterol
- High alcohol intake
- Family history
- Inactivity

(CDC, 2016)

Page 6

SYMPTOMS OF HYPERTENSION

- Headaches
- Shortness of Breath or Confusion
- Nose Bleeding
- Nausea or Vomiting
- Chest Pain
- Changes in Vision

(CDC, 2016)

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RISK FACTORS OF HYPERTENSION

- Family history of high blood pressure
- Poor diet and high sodium intake
- Inadequate intake of potassium
- History of smoking and second –hand smoke exposure
- Sedentary lifestyle
- Too much alcohol consumption
- Diabetes
- Overweight or obesity

(AHA, 2017)

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COMPLICATIONS OF HYPERTENSION

- Coronary artery disease
- Heart attack
- Heart disease
- Stroke
- Kidney damage &/or Renal Failure
- Aneurysm
- Congestive Heart Failure
- Weakens and narrows blood pressure
- Erectile dysfunction in males

(AHA, 2017)

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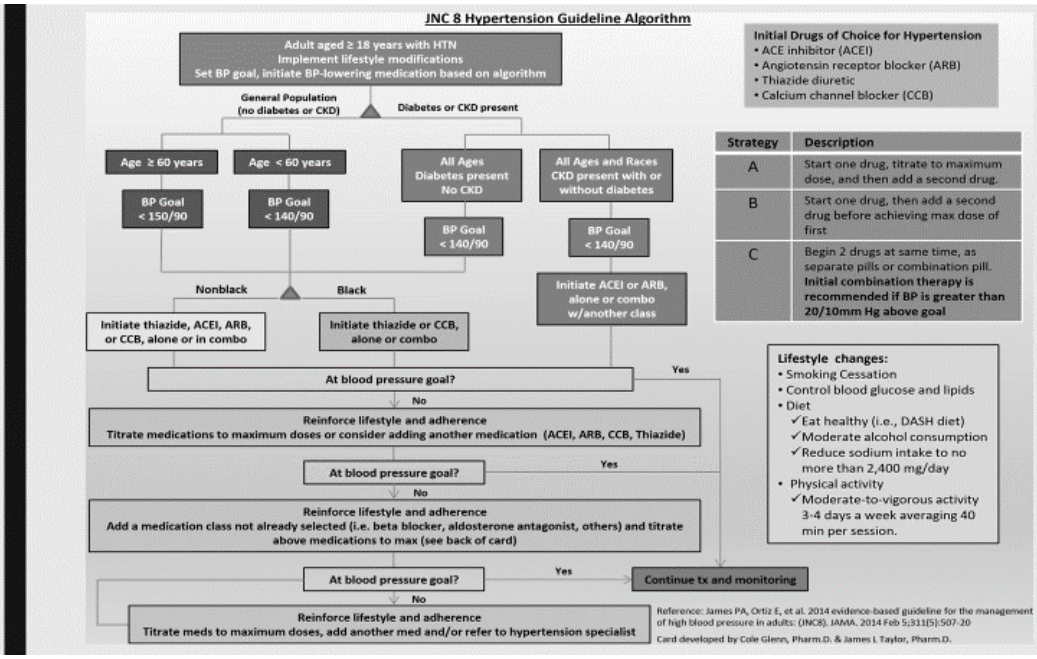
THE JNC 8 & ACC LIFESTYLE MODIFICATIONS

Lifestyle Modification	Recommendation
Reduce weight	Maintain normal body weight (body mass index 18.5–24.9 kg/m^2)
Adopt DASH eating plan[a]	Consume a diet rich in fruits, vegetables, and low-fat dairy products with a reduced content of fat (e.g., saturated and total fat) and cholesterol.
Reduce dietary sodium	Reduce dietary sodium intake to less than 2,300 mg of sodium a day. For persons who are ≥ 51 years of age, black, and/or have hypertension, diabetes, and chronic kidney disease, reduce sodium to less than 1,500 mg per day.[b]
Increase physical activity	Engage in regular aerobic physical activity such as brisk walking for at least 30 min per day, most days of the week. This may be broken down into shorter time intervals such as 10 minutes.[c]
Moderate alcohol consumption	Limit consumption to no more than 2 drinks (e.g. 24 oz. beer, 10 oz. wine, or 3 oz. 80-proof whiskey) per day in most men, and to no more than 1 drink per day in women and lighter weight persons.
Quit smoking	Encourage patients to quit smoking. Refer patients to the quit smoking phone line where they can talk with a counselor for help with quitting smoking: 1-877-44U-QUIT or 1-877-270-STOP (Georgia quit line).

(James et al., 2014)

Page 10



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Appendix B: Presentation on Blood Pressure Measurement for Clinic Staff (Day 2)

STAFF EDUCATIONAL MODULE ON BLOOD PRESSURE MEASUREMENT

BY
CHINYERE UKOMADU

MSN, Walden University (2012)
BS, Walden University (2010)
Project Submitted in Partial Fulfillment
Of the Requirements for the Degree of
Doctor of Nursing Practice
Walden University
May 2019

Page 1

PROGRAM OVERVIEW

- Blood Pressure
- Normal Blood Pressure
- Hypertension
- Measurement of Blood Pressure
- JNC 8 & ACC Lifestyle Modification
- JNC Hypertension Guideline Algorithm

Page 2

WHAT IS BLOOD PRESSURE?

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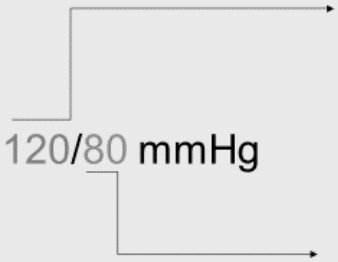
- Blood pressure rises and falls throughout the day.

(CDC, 2016)

Page 3

WHAT IS NORMAL BLOOD PRESSURE?



Systolic pressure (top number) represents the force that occurs when the heart is pushing the blood out of the heart into the arteries.

Diastolic pressure (bottom number) represents the pressure in the arteries when the heart is filling up with blood (i.e., the peripheral arterial tone).

(CDC, 2016)

Page 4

HYPERTENSION

Stage of Hypertension	Blood pressure	General Recommendation
Normal	Normal BP (BP <120/80 mm Hg)	Encourage healthy behaviors and lifestyle modifications to keep blood pressure in normal range.
Pre-Hypertension	Elevated BP (BP 120–129/<80 mm Hg)	Patient has an increased risk of future hypertension. Suggest that the patient make lifestyle modifications and regularly monitor blood pressure.
Stage I Hypertension	Stage 1 Hypertension (BP 130–139/80-89 mm Hg)	Patient has hypertension and should seek medical care.
Stage 2 Hypertension	Stage 2 Hypertension (BP 140/90 mm Hg)	

(AHA, 2017)

Page 5

BLOOD PRESSURE MEASUREMENT

Can be measured via the following the methods:

1. Manually with a sphygmomanometer
2. With an automated machine
3. Ambulatory blood pressure monitoring
4. Home blood pressure monitoring

(James et al., 2014a)

Ambulatory monitoring is indicated in any of the following conditions:

- Suspected white-coat HTN
- Apparent drug resistance
- Hypotensive symptoms with antihypertensive medication
- Episodic hypertension
- Autonomic dysfunction

(James et al., 2014a)

White coat syndrome occurs when patients register a higher than normal blood pressure reading, only at the doctor's office, where doctors or healthcare professionals wear white laboratory coats

(Johnson, 2018)

Page 6

BLOOD PRESSURE MEASUREMENT

- Should be done in a quiet and relaxed atmosphere
- Patients should
  - be seated comfortably for at least 5 minutes in a chair, than on an exam table
  - have feet flat on the floor, back support & arm supported at heart level
- Should be taken on bare upper arm, with appropriate-sized cuff whose diameter covers 80% of the mid-upper arm circumference

Average from two to three measurements should be taken

If first visit, blood pressure should be taken from both arms, then the side with the higher reading should be used for subsequent measurements

(James et al., 2014b)

Page 7

BLOOD PRESSURE MEASUREMENT

- Patients should refrain from caffeine, cigarettes and physical activity for at least 30 minutes before measurement
- Patients should empty their bladders or encouraged to do so, before taking measurement
- Two to three measurements should be taken, then average recorded
- If first visit, blood pressure should be taken from both arms, then the side with the higher reading should be used for subsequent measurements

(James et al., 2014b)

Page 8

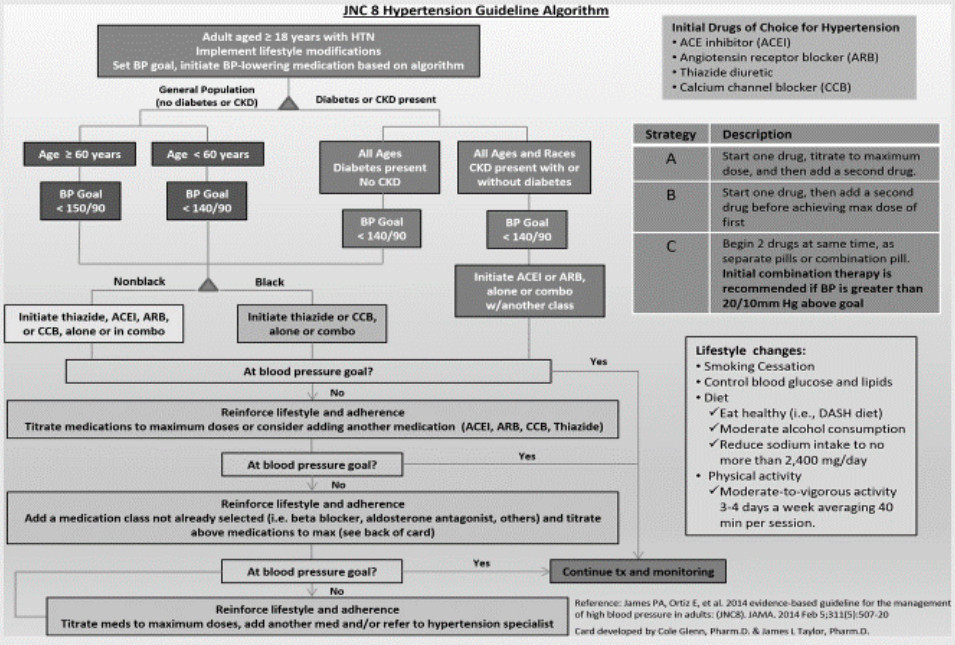
THE JNC 8 & ACC LIFESTYLE MODIFICATIONS

Lifestyle Modification	Recommendation
Reduce weight	Maintain normal body weight (body mass index 18.5–24.9 kg/m^2)
Adopt DASH eating plan[a]	Consume a diet rich in fruits, vegetables, and low-fat dairy products with a reduced content of fat (e.g., saturated and total fat) and cholesterol.
Reduce dietary sodium	Reduce dietary sodium intake to less than 2,300 mg of sodium a day. For persons who are ≥ 51 years of age, black, and/or have hypertension, diabetes, and chronic kidney disease, reduce sodium to less than 1,500 mg per day.[b]
Increase physical activity	Engage in regular aerobic physical activity such as brisk walking for at least 30 min per day, most days of the week. This may be broken down into shorter time intervals such as 10 minutes.[c]
Moderate alcohol consumption	Limit consumption to no more than 2 drinks (e.g. 24 oz. beer, 10 oz. wine, or 3 oz. 80-proof whiskey) per day in most men, and to no more than 1 drink per day in women and lighter weight persons.
Quit smoking	Encourage patients to quit smoking. Refer patients to the quit smoking phone line where they can talk with a counselor for help with quitting smoking: 1-877-44U-QUIT or 1-877-270-STOP (Georgia quit line).

(James et al., 2014a)

Page 9

JNC 8 Hypertension Guideline Algorithm



Initial Drugs of Choice for Hypertension
- ACE inhibitor (ACEI)
- Angiotensin receptor blocker (ARB)
- Thiazide diuretic
- Calcium channel blocker (CCB)

Strategy	Description
A	Start one drug, titrate to maximum dose, and then add a second drug.
B	Start one drug, then add a second drug before achieving max dose of first
C	Begin 2 drugs at same time, as separate pills or combination pill. **Initial combination therapy is recommended if BP is greater than 20/10mm Hg above goal**

Lifestyle changes:
- Smoking Cessation
- Control blood glucose and lipids
- Diet
  - ✓Eat healthy (i.e., DASH diet)
  - ✓Moderate alcohol consumption
  - ✓Reduce sodium intake to no more than 2,400 mg/day
- Physical activity
  - ✓Moderate-to-vigorous activity 3-4 days a week averaging 40 min per session.

Reference: James PA, Ortiz E, et al. 2014 evidence-based guideline for the management of high blood pressure in adults: (JNC8). JAMA. 2014 Feb 5;311(5):507-20

Card developed by Cole Glenn, Pharm.D. & James I. Taylor, Pharm.D.

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Appendix C: Handout for Day 1 Lecture

FLYER
Staff Education on Hypertension Management & Control based on JNC 8 and ACC guidelines

Date: May 2019
Time: 11:30 am to 12 noon

LOCATION: Family Health Clinic in Southern Texas

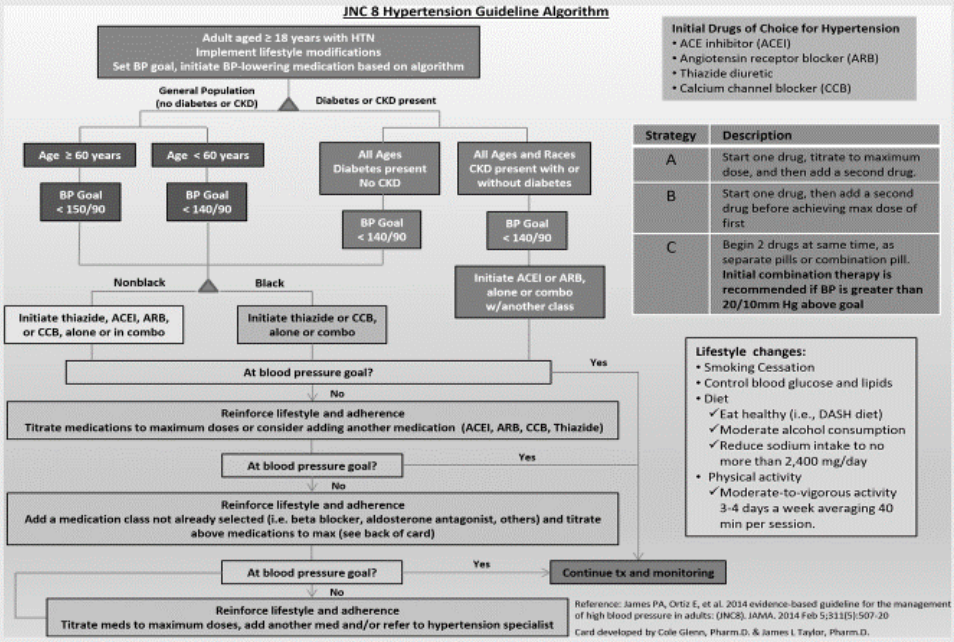
1

THE JNC 8 & ACC LIFESTYLE MODIFICATIONS

Lifestyle Modification	Recommendation
Reduce weight	Maintain normal body weight (body mass index 18.5–24.9 kg/m^2)
Adopt DASH eating plan[a]	Consume a diet rich in fruits, vegetables, and low-fat dairy products with a reduced content of fat (e.g., saturated and total fat) and cholesterol.
Reduce dietary sodium	Reduce dietary sodium intake to less than 2,300 mg of sodium a day. For persons who are ≥ 51 years of age, black, and/or have hypertension, diabetes, and chronic kidney disease, reduce sodium to less than 1,500 mg per day.[b]
Increase physical activity	Engage in regular aerobic physical activity such as brisk walking for at least 30 min per day, most days of the week. This may be broken down into shorter time intervals such as 10 minutes.[c]
Moderate alcohol consumption	Limit consumption to no more than 2 drinks (e.g. 24 oz. beer, 10 oz. wine, or 3 oz. 80-proof whiskey) per day in most men, and to no more than 1 drink per day in women and lighter weight persons.
Quit smoking	Encourage patients to quit smoking. Refer patients to the quit smoking phone line where they can talk with a counselor for help with quitting smoking: 1-877-44U-QUIT or 1-877-270-STOP (Georgia quit line).

(James et al., 2014)

Page 10



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4

Appendix D: Handout for Day 2 Lecture

FLYER
Staff Education on Blood Pressure Measurement

Date: May 2019
Time: 11:30 am to 12 noon

LOCATION: Family Health Clinic in Southern Texas

1

BLOOD PRESSURE MEASUREMENT

Different methods:

1) **Manually with sphygmomanometer**
2) **Automated machine**
3) **Ambulatory blood pressure monitoring**
4) **Home blood pressure monitoring**
(James et al., 2014a)

occurs when patients register a higher than normal blood pressure reading, only at the doctor's office, where doctors or healthcare professionals wear white laboratory coats
(Johnson, 2018)

Ambulatory monitoring is indicated in any of these conditions:

- **Suspected white-coat HTN**
- **Apparent drug resistance**
- **Hypotensive symptoms with antihypertensive medication**
- **Episodic HTN**
- **Autonomic dysfunction**

(James et al., 2014a)

2

BLOOD PRESSURE MEASUREMENT

- Measurements should be done in a quiet and relaxed atmosphere
- Patients should be seated comfortably for at least 5 minutes in a chair, than on an exam table
- Patients' feet should be flat on the floor, back should be supported, and arm supported at heart level
- Measurement should be taken on bare upper arm, with appropriate-sized cuff whose diameter covers 80% of the mid-upper arm circumference
- Patients should be asked to refrain from caffeine, cigarettes and physical activity for at least 30 minutes before measurement
- Patients should empty their bladders or encouraged to do so, before taking measurement
- Two to three measurements should be taken, then average recorded
- If first visit, blood pressure should be taken from both arms, then the side with the higher reading should be used for subsequent measurements

(James et al., 2014b)

3

REFERENCES

- James, P. A., Ortiz, E., et al. (2014a). 2014 Evidence-Based Guideline for the Management of High Blood Pressure in Adults: Report from the Panel Members Appointed to the Eighth Joint National Committee (JNC 8). *JAMA, 311*(5):507–520. Retrieved from doi:10.1001/jama.2013.284427
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Appendix E: Pretest Questionnaire (Day 1)

Please read each of the following questions and circle the appropriate option that corresponds to your current level of knowledge and attitudes about hypertension screening among patients at the clinic.

Please make note of the number at the top of your survey and make certain that you indicate it on the posttest survey, for identification purposes.

1.	Do you explain to patients what HTN is and its complications, especially if left untreated?	Yes	No
2.	Do you explain BP measurement guidelines to patients and how to follow them?	Yes	No
3.	Do you know what modifiable and non-modifiable lifestyle changes are?	Yes	No
4.	Do you encourage patients to be involved in management of their HTN?	Yes	No
5.	Do you tell patients the implication of high sodium intake in their diet?	Yes	No
6.	Do you remind patients to exercise regularly and monitor their weight?	Yes	No
7.	Do you tell patients to call for emergency when their BP reading goes higher?	Yes	No
8.	Do you tell patients to keep their doctor's appointment regularly?	Yes	No
9.	Do you teach patients to take their medications at the same time every day as prescribed?	Yes	No
10.	Do you teach patients to avoid salty and processed foods?	Yes	No
11.	Do you teach patients about the DASH diet or to eat more fruits, vegetables and lean protein?	Yes	No
12.	Do you tell patients to stop smoking and/or to seek help in stopping?	Yes	No

Appendix F: Posttest Questionnaire (Day 1)

Please read each of the following questions and circle the appropriate option that corresponds to your current level of knowledge and attitudes about hypertension screening among patients, after the lecture presentation.

Please place your pretest number at the top of this form for matching purposes.

1.	Will you explain to patients what HTN is and its complications, especially if left untreated?	Yes	No
2.	Will you explain BP measurement guidelines to patients and how to follow them?	Yes	No
3.	Will you know what modifiable and non-modifiable lifestyle changes are?	Yes	No
4.	Will you encourage patients to be involved in management of their HTN?	Yes	No
5.	Will you tell patients the implication of high sodium intake in their diet?	Yes	No
6.	Will you remind patients to exercise regularly and monitor their weight?	Yes	No
7.	Will you tell patients to call for emergency when their BP reading goes higher?	Yes	No
8.	Will you tell patients to keep their doctor's appointment regularly?	Yes	No
9.	Will you teach patients to take their medications at the same time every day as prescribed?	Yes	No
10.	Will you teach patients to avoid salty and processed foods?	Yes	No
11.	Will you teach patients about the DASH diet or to eat more fruits, vegetables and lean protein?	Yes	No
12.	Will you tell patients to stop smoking and/or to seek help in stopping?	Yes	No

Appendix G: Pretest Questionnaire (Day 2)

Please read each of the following questions and circle the appropriate option that corresponds to your current level of knowledge and attitudes about blood pressure measurement at the clinic.

Please make note of the number at the top of your survey and make certain that you indicate it on the posttest survey, for identification purposes.

1.	Do you tell patients why HTN is a “silent killer”?	Yes	No
2.	Do you know the current BP guidelines on HTN?	Yes	No
3.	When taking BP measurement of patient, do you tell them to be calm, and to sit down, and refrain from talking?	Yes	No
4.	Do you take the weight of the patient first before taking their BP?	Yes	No
5.	Do you use the proper BP cuff for specific patients, depending on their weight?	Yes	No
6.	Do you teach patients about white coat HTN?	Yes	No
7.	Did you teach patients to regularly monitor and record their BP readings at home?	Yes	No
8.	Do you tell patients to call for emergency when their BP reading goes higher?	Yes	No

Appendix H: Posttest Questionnaire (Day 2)

Please read each of the following questions and circle the appropriate option that corresponds to your current level of knowledge and attitudes about blood pressure measurement after the lecture presentation.

Please place your pretest number at the top of this form for matching purposes.

1.	Will you tell patients why HTN is a “silent killer”?	Yes	No
2.	Will you know the current BP guidelines on HTN?	Yes	No
3.	When taking BP measurement of patient, will you encourage them to be calm, and to sit down, and refrain from talking?	Yes	No
4.	Will you take the weight of the patient first before taking their BP?	Yes	No
5.	Will you use the proper BP cuff for specific patients, depending on their weight?	Yes	No
6.	Will you teach patients about the white coat HTN?	Yes	No
7.	Will you teach patients to regularly monitor and record their BP readings at home?	Yes	No
8.	Will you tell patients to call for emergency when their BP reading goes higher?	Yes	No