2018

Educating Staff Members in an Outpatient Clinic on Hypertension Management

Helen Anyiam
Walden University

Walden University

College of Health Sciences

This is to certify that the doctoral study by

Helen Anyiam

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

Review Committee
Dr. Cheryl Waldorf McGinnis, Committee Chairperson, Nursing Faculty
Dr. Janice Long, Committee Member, Nursing Faculty
Dr. Faisal Hassan Aboul-Enein, University Reviewer, Nursing Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2018

Abstract

Educating Staff Members in an Outpatient Clinic on Hypertension Management

by

Helen Anyiam

MS, Walden University, 2014

BS, University of Houston, Victoria, Sugarland Campus, 2008

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

August 2018

Abstract

An educational module on hypertension was created in response to the recurring pattern of patient visits with hypertension and an observed knowledge gap among nursing staff in an outpatient clinic located in the southern United States. The educational module was patterned after Joint National Committee-8 and American College of Cardiology guidelines involving patient lifestyle modification and provided clinic staff with information on hypertension diagnosis and self-management for use in patient education. The module was reviewed by a panel of 3 experts who approved it for appropriateness and clarity of content and made one minor recommendation for revision. The education materials were modified to meet the panel's recommendations and subsequently presented to 5 nursing staff members. Pre- and postmodule questionnaires were provided to the staff to determine the extent of their learning from the education program. Pretest results indicated that staff lacked information on the guidelines for treatment of hypertension. Posttest results indicated that all 5 participants found the module information useful for staff to use in educating patients on self-management of hypertension. Providing nursing staff with current evidence-based practice guidelines can increase staff nurse knowledge on hypertension management. Educating nursing staff has the potential to effect positive social change by empowering staff and patients to improve health care outcomes by enabling staff to coach patients on hypertension management using up-to-date evidence-based practice guidelines.

Educating Staff Members in an Outpatient Clinic on Hypertension Management

by

Helen Anyiam

MS, Walden University, 2014

BS, University of Houston, Victoria, Sugarland Campus, 2008

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

August 2018

Dedication

I am dedicating my life and my academic endeavors to almighty God. I thank God for His mercy, guidance, encouragement, and success. All glory goes to Him.

My dedication also goes to my parents, Mr. Jonathan Ajoku and Mrs. Mercy Ajoku, who are with the Lord. My father, your value of education had a good impact in my pursuit of education. To my mother, who worked hard as a petty trader to support my primary and secondary education, I thank you. May your souls rest in peace.

To my brother, sisters, and brothers-in-law, I thank you for your contributions to my education.

I also want to use this opportunity to thank and dedicate my achievements to my immediate family: my husband and my children.

My husband, Chigozie Ike Anyiam, was very supportive, courageous, and motivational. His words encouraged me and kept me going.

To my children, Donnelly Ike, Henry Ike, Stanley Ike, and Krystle Ike, thank you for understanding the rough days of my busy academic life. My prayer for you is for God to lead you to the right path. I also pray to God to bless you so you can achieve the highest level of education.

Acknowledgments

I want to seize this opportunity to express my gratitude to my project chair, Dr. Cheryl McGinnis. Thank you for your constructive reviews of my project. My project came this far because of your direction and timely response.

I also acknowledge Dr. Janice Long and Dr. Aboul-Enein for all their efforts in pointing me to the right direction.

I also want to thank Dr. Moss, the doctoral program director, for providing helpful support.

Table of Contents

List of Tables iv

Section 1: Nature of the Project 1

Introduction 1

Problem Statement 3

Purpose Statement 4

Nature of the Project 5

Significance 6

Summary 7

Section 2: Background and Context 9

Introduction 9

Concepts, Models, and Theoretical Framework 9

Relevance to Nursing Practice 11

Local Background and Context 11

Role of the DNP Student 12

Role of the Project Team 13

Search Strategy 13

Literature Review 14

Education and Self-Management 14

Clinical Guidelines 16

Summary 18

Section 3: Collection and Analysis of Evidence 20

Introduction 20
Practice Problem 20
Project Design 20
Participants 21
Procedures 22
Ethical Considerations 24
Data Collection and Analysis 24
Assumptions and Limitations 25
Summary 25
Section 4: Findings and Recommendations 27
Introduction 27
Findings and Implications 28
Phase 1: Panel Evaluation 28
Phase 2: Staff Survey 29
Recommendations 31
Strengths and Limitations 33
Section 5: Dissemination Plan 38
Analysis of Self 38
Summary 39
References 41
Appendix A: Educational Module on Hypertension 47
Appendix B: Panel Evaluation Questions Based on Hypertension Education Module 56

Appendix C: Summary of Survey Questions 57

Appendix D: Survey Questions: Pretest 58

Appendix E: Survey Questions: Posttest 59

Appendix F: Site Approval Documentation for Staff Education Doctoral Project 60

List of Tables

Table 1 Panel Questions on Module Content (n = 3) 28

Table 2 Panel Questions on Module Handout (n = 3) 34

Table 3 Panel Questions on Recommendation (n = 3) 34

Table 4 Results of Pretest Survey Questions (n = 5) 34

Table 5 Results of Posttest Survey Questions (n = 5)..... 36

Section 1: Nature of the Project

Introduction

Hypertension (HTN), or high blood pressure, is a leading cause of cardiovascular disease in the United States and a significant public health problem (Centers for Disease Control [CDC], 2016). It often occurs when there is increased volume of blood pumped by the heart and there is resistance to blood flow due to narrower arteries. Increased blood flow is defined based on medical standards set by the American College of Cardiology (ACC). Currently, the threshold for increased blood pressure is based on a reading of 130/80 mmHg or above; the older standard was 140/90 mmHg or higher (ACC, 2017). HTN can cause health problems, including stroke, renal failure, and myocardial infarction (American Family Physician, 2014).

One in every three adults, or approximately 75 million American adults (about 32% of the population), experience high blood pressure (CDC, 2016). HTN is a silent killer because patients may experience HTN for years without any symptoms. In fact, the CDC (2016) reported that HTN contributed to about 360,000 deaths in the United States in 2013. Additionally, HTN intensifies the risk of other serious medical events, such as heart attack, stroke, heart failure, and kidney disease (Ioannidis, 2018). The CDC estimated that HTN is a contributing factor for 70% of individuals who experience their first heart attack, 80% of individuals who experience their first stroke, and 70% of individuals who experience kidney disease (CDC, 2016). These incidences present additional medication expenses to the patient and may lead to workplace absences due to

illness or medical complications from HTN. The annual economic costs stemming from HTN in the United States are estimated to be about $46 billion (CDC, 2016).

Despite the dismal statistics on HTN, it is preventable and manageable through healthy lifestyle choices and, when necessary, medication management (Marshall et al., 2016). The Eighth Joint National Committee (JNC 8) also included these elements in its evidence-based practice (EBP) recommendations on how to adequately manage HTN using both pharmacological and lifestyle modifications (American Family Physician, 2014). Lifestyle modifications include exercise, weight loss, reduced sodium intake, smoking cessation, and the use of medications prescribed to control HTN, diabetes, and dyslipidemia (McCance et al., 2010). Even with weight loss alone, high blood pressure may improve. Buttaro (2012) reported that a weight reduction of just 4.5kg leads to significantly lower blood pressure.

The efficacy of HTN preventative measures is dependent on the role that medical professionals, especially nurses, play in providing health care and education (Terry, 2015). Specifically, nurses need to be updated with current knowledge on new HTN guidelines to better recognize the health condition of the patient and to provide information about preventative and treatment strategies (Terry, 2015). This project's focus was on educating outpatient clinic clinical nursing staff about the risk factors associated with HTN, lifestyle modifications, and medical management using ACC and JNC 8 EBP guidelines. As part of the project, I created educational and screening practices for nurses to increase patient knowledge to self-manage their HTN.

Problem Statement

Researchers have found that correct identification of patients at risk for HTN leads to proper diagnosis, treatment, and prevention of the condition (Go et al., 2013). Therefore, it is important for clinical nurses to be knowledgeable about HTN risk factors, medical management, and lifestyle modifications because these areas provide the first line of interaction and communication with patients (Rimando, 2015). These aspects were integrated into my proposed project so that improvements in nursing staff education at an outpatient clinic in a large metropolitan area in the southern United States. Nurses at the clinic provided care for a high rate of patients who frequently visit the clinic due to uncontrolled blood pressure.

The medical director of the facility estimated that approximately 60% of patients with clinic appointments were diagnosed with HTN. Of these patients, 55% frequented the clinic due to elevated blood pressure and lack of understanding of proper HTN management. Patients often made repeated clinic visits complaining of headaches that corresponded with their elevated blood pressure. Some patients even complained of dizziness with elevated blood pressure. However, patients frequently did not follow the blood pressure lifestyle modifications on which they were counseled, often admitting that they failed to exercise regularly, eat healthily, and take their medications. According to the medical director, patients seemed to be unaware of specific practices to take in controlling their HTN. Worse, some patients did not take their prescribed blood pressure medications.

In addition, clinical staff members at the outpatient clinic lacked current information and training about the ways in which HTN can be controlled based on new guidelines by ACC and JNC-8. Staff members also lacked knowledge about how to properly educate patients regarding the management of their HTN. The medical director indicated the need to educate clinical staff on the recognition of HTN and the need to report blood pressure elevations to clinic providers. Therefore, there was a need to educate clinical staff members about HTN management for the well-being of patients and the advancement of staff knowledge.

Approval of educational efforts from the organizational leaders of the outpatient clinic was an essential step to take before initiation of any concrete measures. Hodges and Videto (2014) suggested that implementation of the education module was more effective because of leadership support for project funding and quality assurance improvements in staff education. Thus, I submitted the educational module containing current guidelines and preventative measures on HTN for review to a panel of experts prior to presentation to staff.

Purpose Statement

The purpose of this doctor of nursing practice (DNP) project was to create an educational module to educate clinical nursing staff about the risk factors associated with HTN, and subsequent lifestyle modifications and medical management using current EBP guidelines. I presented the module to a panel of experts who reviewed and evaluated the content for staff use at the outpatient clinic. The goal of the module was to increase staff knowledge and assist them in properly managing patients diagnosed with HTN through

patient education on lifestyle modifications, which included smoking cessation, healthy food selection, weight reduction, exercise, lower sodium intake and alcohol consumption, and medication management. Specifically, the education module included changes such as shifting to a low sodium and low-fat diet, following the dietary approach to stop hypertension (DASH) diet, limiting alcohol intake, and smoking cessation. Research showed that all these modifications assisted in controlling HTN (Davis, 2015; Paula et al., 2015).

The aim of the educational module on HTN was to educate nursing staff on HTN recognition and patient lifestyle modifications based on ACC and JNC 8 guidelines (ACC, 2017; American Family Physician, 2014). Nurses received training to recognize the signs and symptoms of abnormal blood pressure readings. Clinic staff members were educated about HTN management through proper lifestyle modification by patients to enable them to effectively self-manage their condition.

Nature of the Project

HTN is a deadly disease that contributes to many health complications but can be controlled through awareness of the disease and treatment (Go et al., 2013). All staff members who care for patients with HTN should be knowledgeable about risk factors and proper medical management, including lifestyle modification. A lack of knowledge about how to properly educate patients had contributed to poor HTN management at one outpatient clinic in the southern United States. The poor management of HTN was evidenced by the high rate of patients frequenting to clinic due to elevated blood pressure who were not aware of the lifestyle modifications necessary to better control their blood

pressure. The long-term goal of this project was to provide staff education about lifestyle modifications and increase awareness of the importance of HTN management.

The project consisted of an educational program for staff members at an outpatient clinic that was submitted for review to a panel of experts and then presented to the staff. I designed the project to increase staff knowledge on the risk factors of HTN, required life-style modifications, and current EBP guidelines for recognition and treatment of the condition. I invited a panel of three content experts to evaluate the educational module and complete a summative evaluation to assess the content of the educational module. I presented the module to the staff but also included presurvey and postsurvey questions before and after module presentation. Pre and postsurvey questions were performed to establish current staff knowledge on HTN. The educational module consisted of a 1-hour program featuring the current ACC and JNC 8 guidelines for blood pressure management, including lifestyle modifications (ACC, 2017; American Family Physician, 2014). The project has the potential to create positive social change by providing nursing staff with current EBP guidelines about HTN management. With this knowledge, nursing staff may be better prepared to recognize patients at risk for high blood pressure and to educate them on HTN management, thereby potentially improving patient health outcomes.

Significance

Instilling important health care knowledge about HTN treatment in nurses and other staff members resulted in a variety of benefits in addition to improving patients' health outcomes. The results of the project contributed to positive social change in the

U.S. health care system by helping to increase knowledge of HTN management among staff members caring for patients with this condition. In addition, the results of this project helped reduce the risk of patient complications related to poor HTN management. This project may aid health care leaders in the design of future educational modules to help ensure that nurses possess the most current knowledge about HTN and are able to help patients manage HTN.

Summary

The ACC (2017) guidelines promote radical changes in the management of HTN. For example, the threshold for high blood pressure has been lowered to 130/80 mm Hg from 140/90 mm Hg (Ioannidis, 2018). As a result of this change, the proportion of adults in the United States labeled as having HTN increased from 32% to 46% in 2018 (Ioannidis, 2018). Due to the recent changes in HTN management, recognition and treatment of HTN is increasingly important to assist in the prevention of patient complications. Staff members at the project site lacked current knowledge on HTN parameters and lifestyle management. Therefore, there was a need to educate the nursing staff on HTN patient management.

Section 1 of this DNP project included an overview of HTN and related health care problems that arise from an inadequate understanding of HTN and HTN management. At an outpatient clinic in the southern United States, patients had been unable to manage their HTN effectively. In addition, staff members at the clinic had not been educated on the current practice guidelines and required lifestyle modifications necessary to assist in educating patients on the management of HTN. Patients were

frequently visiting the clinic due to elevated and uncontrolled blood pressure with other resultant symptoms. To assist in addressing this clinical problem, I developed this project with the aim of educating the clinic nursing staff about HTN management. The project involved the creation of a staff educational module on HTN, its risk factors, signs and symptoms, and lifestyle modifications. In Section 2, I will expand on the background and content of the project including the supporting literature and theoretical framework for the project. Section 2 will also include an explanation of the relevance of the project to nursing practice and a discussion of my role and that of the project team.

Section 2: Background and Context

Introduction

The identified practice problem at the outpatient clinic in the southern United States involved lack of staff knowledge about abnormal blood pressure and the need for staff education about HTN management. I observed that staff had not been educated on the current ACC and JNC 8 guidelines for HTN management and lifestyle modifications. So, the purpose of this project was to create an educational module that will fill the knowledge gap and provide clinical nursing staff with current information on HTN to assist in patient diagnosis and management of the disease. This section will discuss relevant background information that form the theoretical framework and previous research work which undergird my proposed educational module.

Concepts, Models, and Theoretical Framework

I used two frameworks to guide this project, the novice to expert model (NEM) by Benner (Petipirin, 2016) and the health belief model (HBM) by Hochbaum, Rosenstock, and Kegels (1952). The NEM supported the need explained the importance of training staff for proper acquisition of information to improve patient care while the HBM justified patient education in improving health care outcomes. In the NEM, Benner identified the need for novice nurses to develop specific skills and understanding of patient care through a proper educational background (Davis & Kimble, 2011). Through skills acquisition, the novice learner acquires on-the-job expertise and becomes an expert by acquiring more education and clinical experiences that can be part of the novice nurse's career enhancement and/or clinical specialization training (McEwen & Wills,

2014; Petipirin, 2016). In particular, Benner's model has been the guiding principle for the development of resources, educational programs, and infrastructure needed at various program levels by nurse educators (Thomas & Kellgren, 2017). In my educational program, I used Benner's model to support the need for a staff educational intervention to improve nursing knowledge on HTN. The nursing staff were novices in their knowledge of HTN and patient management based on my prior observation with regard to the staff's knowledge deficit on HTN. With my educational program, I provided staff with updated EBP guidelines on HTN to increase their knowledge of the disease. The intent was to train nursing staff who will become experts on HTN management.

In addition to NEM model, I used the HBM to support my educational project. The HBM, which was developed by Hochbaum, Rosenstock, and Kegels in 1952, provided a context to explain how patient education can improve health care outcomes. The HBM (Hochbaum et al., 1952) has been the most commonly used theory in health education and health promotion (Onoruoiza et al., 2015). It is a psychological model that researchers use to explain and predict health behaviors by focusing on the attitudes and beliefs of individuals (Onoruoiza et al., 2015). The underlying tenet of the HBM is that health behavior is determined by personal belief and, subsequently, that an individual's response can be predicted based on one's perceived susceptibility, severity, benefits, and barriers (Hochbaum et al., 1952). Furthermore, the HBM seems to suggest that the likelihood of someone engaging in and acting on a recommended health action is predominantly based on a change in the individual's perception (Hochbaum et al., 1952). For this reason, the HBM provided a useful framework for my educational module. I

trained clinic staff following ACC and JNC 8 guidelines so they could acquire the necessary information to educate patients with risk for high blood pressure. These staff members can then transfer their learning to hypertensive patients so they can learn to care for themselves once they perceive their susceptibility, realize the severity of their HTN, and appreciate the benefits derived from reducing the complications of HTN.

Therefore, the NEM and HBM provided applicable frameworks to support the educational module. The NEM highlighted the importance of nurse skill acquisition on HTN whereas the HBM emphasized the need for patient education to bridge knowledge gap and improve patient health. Together, NEM and HBM provided a good foundation for my educational module.

Relevance to Nursing Practice

My educational module on HTN is relevant to nursing practice through its provision of an educational or training intervention for nursing staff who lack knowledge of HTN management. The knowledge acquired by the staff should be beneficial to improving and maintaining patient health. My project also contributes to the enhancement of knowledge in the nursing field. Specifically, my educational module on HTN can be used as a guideline for implementing future education courses for nurses on HTN management.

Local Background and Context

The main goal of the project was to create an hour-long staff educational module on HTN management of clinic patients. I submitted the project for review and approval to a group of experts. The module incorporated JNC 8 and ACC guidelines and

recommendations for raising awareness on HTN and management through lifestyle modification in the form of handouts, lectures, and in-service education. It included an educational intervention, including pre- and post-evaluations by the panel of experts composed of the clinic medical director, clinic manager, and clinic supervisor. The medical director was a physician, and the manager was a nurse practitioner while the supervisor held a Bachelor of Science degree in nursing. The project was reviewed by the experts but planned with the clinic staff in mind, so that they could properly teach patients on self-management of HTN.

I designed the program to take place at an internal medicine outpatient clinic in the southern United States that delivered HTN management services to patients who suffer from HTN problems. The clinic has six staff members composed of two registered nurses (RN), two licensed vocational nurse (LVN), and two medical assistants. The clinic staff members were responsible for educating patients at the end of clinic visits. Based on clinic records, one of the common patient complaints after a visit was HTN. Thus, it seemed appropriate that a module be created to update these staffers' knowledge on current HTN standards and on lifestyle management options for patients. I created and submitted for panel review an educational intervention program that filled the knowledge gap of the staff.

Role of the DNP Student

The role of DNP-trained nurses is focused on providing complex health care, preventing illness, and maintaining health (Zaccagnini & White, 2011). I believe that my design and implementation of this educational program on HTN was consistent with this

role. Specifically, I contributed towards improving nursing skills through the dissemination of evidence-based health information to nursing staff. Instilling current practice knowledge in nurses and staff members should assist in improving patient health and outcomes (Hodges & Videto, 2014).

Furthermore, my project served as an intervention for a practice problem that I observed, first-hand, in the clinical setting. I believe that my project work was a display of the good leadership expected from a DNP student and was consistent with the DNP curriculum outlined by the American Association of Nursing Practice in 2006. The curriculum focuses on nursing practice, leadership, collaboration, and the integration of science from many fields of study (Zaccagnini & White, 2011).

Role of the Project Team

The project team included a panel of experts who reviewed my educational module for content and clinical application. The panel included the clinic's medical director, supervisors, and managers. Specifically, the medical director was involved in the planning, design, and administrative support necessary for program implementation. The supervisors and managers of the clinic were main contributors to the improvement of module goals and objectives. The involvement of the panel in the program helped them develop program ownership, which was critical for their eventual acceptance and implementation of the program (see Hodges & Videto, 2014).

Search Strategy

I identified literature for this study through Google Scholar, ProQuest Dissertations and Theses, Ovid nursing, Medline, and CINAHL. Key search terms

included: *nursing management*, *poor hypertension management*, *staff education*, *hypertension*, *staff lack of knowledge*, *patient education on self-efficacy*, *hypertension management by lifestyle modification*, and *eighth Joint National Committee hypertension guidelines*.

Literature Review

According the American Heart Association (AHA), HTN is a serious clinical diagnosis that affects 1 out of 3 adults in the United States (Go et al., 2013). Research reported that 81.5 % of study participants with HTN were aware of their diagnosis, and 74.9 % were treated (Go et al., 2013). Go et al. (2013) reported that 52.5% of study participants have HTN under control, while 47.5 % admitted that they do not have it under control. These statistics show an unclear trend, but it is forecasted that the prevalence of HTN will increase to 40% by the year 2030 (Go et.al., 2013). The increase in the prevalence of HTN poses a problem because hypertension is a precursor to various health problems, including cardiovascular diseases such as stroke and myocardial infarction, and renal failure (American Family Physician, 2014). The increase in HTN prevalence is a challenge that clinicians and patients alike will need to work on to prevent serious health issues that lead to death and/or expensive health care costs (CDC, 2016). So, joint effort among different stakeholders must be conducted to hurdle the obstacle that HTN presents.

Education and Self-Management

The literature search revealed that education is critical to improving adults' HTN self-management skills. Specific aspects that need to be emphasized involve a patient's

adherence to medication, daily stress management, nutritious and well-balanced diet, and regular exercise (Rimando, 2015). Similarly, Marshall and colleagues (2016) reported that healthy lifestyle choices, and medication management contribute to the prevention of HTN. These are the same suggestions outlined by the JNC 8 and ACC which stated that using both pharmacological and lifestyle modifications are key in HTN management (American Family Physician, 2014).

Provider education of clinical guidelines is a key component in managing HTN (Brown et al., 2016). Identifying methods for training and educating providers, where practice guidelines are concerned, requires assessing the needs of the provider. Some factors to be considered to ensure provider compliance include time availability and resources (Brown et al., 2016). However, an evidence-based practice framework requires strongly encouraging providers to use the most contemporary guidelines to deliver the best care possible. This includes (a) controlling blood pressure, (b) managing cholesterol, (c) prescribing aspirin, and (d) terminating smoking (Stone et al., 2013).

In addition to patient education, clinicians should also be aware of reasons that contribute to mismanagement of care with regard to HTN. Patient-reported barriers to proper HTN self-management included: failure to accept their diagnosis, lack of knowledge regarding symptoms, poor communication with healthcare providers, failure to take medications, and management of co-morbidities such as type 2 diabetes (Fort et al., 2013). These factors must be integrated into patient-centered educational program so patients will be better equipped in dealing with their diagnosis. At the same time, family and societal considerations must be respected in managing HTN. Patients must respond

to their medical situation with a sense of urgency, seek accessible health services, ask for nurse and physician guidance, request frequent communication with healthcare providers, and depend on family and community support (Barnes & Lu, 2012). If taken into consideration, provider and patient education will contribute to successful self-management of HTN.

Clinical Guidelines

Currently, there are two predominant clinical guidelines that suggest preventative measures for HTN. The JNC 8 is one panel that recommends pharmacological and lifestyle changes in management of HTN (American Family Physician, 2014). The other guideline is from the ACC who also supported HTN management through lifestyle modification but added that clinicians and patients alike should be cognizant of abnormal blood pressure readings, and the signs symptoms of abnormal blood pressure leading to treatment of HTN (ACC, 2017).

In both guidelines, lifestyle modification is a common recommendation. Page (2014) reported that lifestyle interventions could include weight reduction, regular aerobic exercise with a duration of 30 minutes or more, reduced salt intake to less than 2.4 grams a day, use of the dietary approach to stop HTN (DASH) eating plan, cigarette cessation, and moderation of alcohol intake. These activities, combined or otherwise, have been reported to yield lower blood pressure on patients who were earlier diagnosed with HTN. For example, hypertensive patients with type 2 diabetes had significantly reduced HTN after they followed a DASH diet and started walking as a regular form of exercise (Davis, 2015; Paula et al., 2015). Even in hypertensive patients with no known

co-morbidity, significant reductions in their blood pressure were found when regular treadmill exercises were performed during an 8- to 12-week exercise program (Dimeo et al., 2012). These research studies showed that healthy eating, active living, and achieving a healthy weight have a major impact on prevention and management of HTN. More specifically, the risk factors of being overweight, physical inactivity, and high sodium intake appear to be major independent contributors to HTN. These studies also show that DASH diet and regular exercise have the greatest impact on preventing and managing HTN (Davis 2015).

Another aspect of the clinical guidelines found in the literature dealt with pharmacological attributes related to HTN. Medication adherence was claimed to be an essential part of a successful HTN treatment (Brown et al., 2016; Herttua et al., 2013; Hacihasanoğlu, & Gözüm, 2011). Medication adherence behavior is complex and multifaceted so only a coordinated and supported effort can ensure the full benefits of medication adherence (Brown et al., 2016). Significant decreases in systolic and diastolic blood pressures were found among study patients who underwent patient education on medication adherence alone, and in combination with healthy lifestyle and behavior teaching on HTN reduction (Dasgupta et al., 2015; Hacihasanoğlu, & Gözüm, 2011). Therefore, lifestyle modification and perception of self-efficacy regarding medication adherence proved to be effective in showing improvement in patients who have HTN.

Failure to recognize medication adherence as important aspect of HTN management could yield adverse results. For example, Herttua et al. (2013) reported that patients who do not take their medication as prescribed are four times more likely to die

of a stroke within 2 years of being prescribed blood pressure medication. In the long-term, the risk of stroke in the 10th year is three times more compared to patients who took their medication as prescribed by their doctor (Herttua et al., 2013). Additionally, the patients who did not adhere to their medication schedule were more likely to be admitted to a hospital after having a stroke (Herttua et al., 2013). Hospitalization increased to 2.7 times in the 2nd year for non-adherent patients who were prescribed anti-hypertensive drugs compared to adherent patients, and 1.7 times higher in the 10th year (Herttua et al., 2013). Clearly, failure to adhere to an anti-hypertensive medication regimen lead to higher risk of heart disease, heart attack, and stroke (Herttua et al., 2013).

The clinical guidelines for managing HTN, based on JNC 8 and ACC, include both pharmacological and lifestyle modification management. Combining and integrating pharmacological management with lifestyle modification in a provider-led education program should prove to be effective in lowering blood pressure and decreasing risks for cardiovascular diseases and other related health problems. Educating staff on the current guidelines will improve their knowledge of patient management for HTN, thus improving patient outcomes.

Summary

Section two addressed the importance and utility of education in managing and preventing HTN. Both provider and patient education play a synergistic role in teaching about lifestyle modification and medication adherence of hypertensive patients to lower their blood pressure. The purpose of this literature review was to identify and summarize the current evidence-based practice guidelines on hypertension necessary for the

development of a staff education program. Section three will focus on the project introduction and practice question, program development and methods for implementation and analysis of program results.

Section 3: Collection and Analysis of Evidence

Introduction

The purpose of this project was to develop an educational module on HTN for nursing staff at an outpatient clinic. The project goal was to increase staff knowledge on the management of HTN, including lifestyle changes and current evidence-based practice guidelines. In Section 3, I discuss the practice problem, project design, ethical considerations, data collection and analysis procedures, and assumptions and limitations.

Practice Problem

In an outpatient clinic in the southern United States, the facility manager observed that staff lack current knowledge on HTN information and management. This gap in knowledge seemed to be related to the many repeat visits made by patients who showed symptoms of HTN. I developed an educational module for clinic staff to bridge the knowledge gap on HTN and help patients improve their self-management of their HTN diagnosis. The module included pre and posttest questions, directed to the staff, to assess their baseline information about HTN and knowledge acquired after exposure to the module. A panel of experts evaluated the module before it was presented to staff. The experts examined the module content its adequacy and appropriateness in filling the knowledge gap.

Project Design

I gathered sources of evidence for the module's educational content from JNC-8 and ACC HTN management guidelines (American College of Cardiology, 2017; American Family Physician, 2014). Guideline content provided the most up-to-date EBP

information for module content. I presented the program module to staff using lecture, discussion, and a handout. EBPs provide nurses with methods of using critically appraised and scientifically proven evidence for delivering quality and effective health care information (American Nurses Association, 2015). The JNC-8 and ACC are two entities that share a common goal of improving cardiovascular health, and both have mandated EBP information that is intended to improve and prevent HTN (Gibbons et al., 2003; Page, 2014).

The educational module consisted of three components (a pretest, lecture and handouts, and a posttest evaluation) and had two phases. The first phase involved panel assessment of the module for quality control and approval. Once approved by the panel of experts, the project proceeded to the second phase, which involved presentation to the staff. The staff went through a pretest to determine their current knowledge on HTN and its management. They then attended an hour-long lecture and received a handout copy of important points on HTN lifestyle modification. After the lecture, they completed a posttest evaluation to ascertain the information they received from the lecture.

Participants

I initially presented the educational module to a panel of experts composed of the facility's medical director, chief nursing officer, and staff educator. The officers were employees of the outpatient clinic in the southern United States, which served as the project site. The medical director was a medical doctor, and both the nursing officer and educator were RNs with an MSN degree.

Once approved, I presented the module to the clinic staff, which was composed of two RNs with an associate degree, two licensed LPNs, and two certified medical assistants who also assisted in the triage unit of the clinic. I asked all participants to fill out a premodule presentation survey to establish their baseline knowledge on HTN. Immediately after the presentation, participants were required to answer a post-module presentation survey to determine the information that they acquired and recalled from the module.

Procedures

The educational module was an hour-long Microsoft PowerPoint presentation supplemented by a handout that showed current information on HTN in terms of diagnosis and lifestyle management activities (see Appendix A). I presented the module in two phases. Phase 1 involved a presentation to a panel of experts who evaluated and assessed the educational module on HTN and the lifestyle changes based on JNC-8 and ACC guidelines. The panel was expected to approve and/or suggest pointers to improve the module. The second phase involved the presentation of the module to the nursing staff who completed pre and posttest survey questions to determine their understanding of current HTN guidelines. More detailed description of each phase is provided in the following subsections.

Phase 1: Panel evaluation. The panel of experts assessed the module based on a set of questions regarding module content and appropriateness to the staff. The set of questions I developed and provided to the panel was based on a Likert scale that had the following options: strongly disagree, disagree, agree, and strongly agree. Panel evaluation

questions revolved around the adequacy and appropriateness of module content based on the outpatient clinic's education initiative. The questionnaire had seven questions based on the scale and one open-ended question that asked the panel for any suggestions to improve the module before presentation to the staff (see Appendix B).

Phase 2: Staff survey. After Phase 1 and panel suggestions and improvements had been incorporated in the educational module, I presented it to the nursing staff at a time that was deemed appropriate by the clinic management. I asked participants to fill out the pretest survey before listening to the lecture in Appendix A. After the lecture, participants were asked to answer a posttest survey and were given a handout as a summary of what they learned (see, also, Appendix A). Survey questions revolved around the knowledge of participants about diagnosis and management of HTN based on JNC-8 and ACC guidelines (see Appendix C). Participant answers were based on a Likert scale ranging from 1 to 5, with 1 as completely disagree, 2 as somewhat disagree, 3 as neither agree nor disagree, 4 as somewhat agree, and 5 as completely agree. The first seven questions in the pre and posttest survey included the same statements to test the knowledge of participants regarding how to identify patients who are hypertensive, how to know complications of the disease, how to manage the disease without medication, and how to realize the important role that nurses play in teaching self-management to patients (see Appendices D and E). I developed the questions this way to emphasize current information on HTN which the participants need to know to better identify at-risk patients (Davis, 2015). The posttest survey questions also included additional statements

asking participants about the utility of the module in increasing their awareness about HTN and their role as facilitators in improving patient health (see Appendix E).

Ethical Considerations

The educational module underwent necessary IRB approval guidelines before conducting the panel evaluation and survey. The Site Agreement provided in Appendix B was submitted for approval before formative and summative evaluation of the project by the panel of experts. All documents, data, and information from the panel evaluation and staff survey were confidential and anonymous. A consent form was given each staff member before and after commencement of the module survey questions. The consent form stated that participation is voluntary and confidential. Anonymity was further established by assigning numbers on pre and posttest forms instead of identifying names of participants. I will keep study results in a secure location for 5 years, as per IRB requirements. I had established a cordial and working relationship with the study participants in the clinic so their participation and cooperation in the project was not compromised.

Data Collection and Analysis

I summarized the panel evaluation and survey results. Panel results were analyzed and explained based on the utility of the module in properly educating staff on current HTN guidelines. Favorable responses from the panel were the determining factor in approval of the module and its eventual presentation to the staff. Pre- and post-test results were summarized based on the ten summary questions outlined in Appendix C. Descriptive statistical techniques, using the program Excel or SPSS were used to analyze

results. Study sample size, n = 3 for panel evaluation and n = 6 for staff survey, was small because it is dependent on one outpatient clinic.

Assumptions and Limitations

The overarching goal of this DNP project was to educate the outpatient clinic staff on the proper way of managing HTN. This goal came to fruition through an educational module that utilized JNC-8 and ACC lifestyle modification guidelines. However, approval of the educational module by a panel of experts was an important and necessary step to undertake before staff presentation. Therefore, it was assumed that the module would be useful in bridging the gap of information among the clinic staff. Better staff information on HTN was also assumed to lead to better patient health outcome through improved self-management of HTN.

I assumed that the panel of experts evaluated the module without bias and with the goal of improving staff knowledge. The modified version of the module, resulting from the panel evaluation, should be utilized by the clinic in the future.

Limitations of the study were dependent on the panel reviewers of the module. Their willingness to participate in evaluating the module was an important limitation that I considered. The amount of time that panel members designated for the evaluation was also considered since they also had other responsibilities to fulfill in the outpatient clinic.

Summary

Addressing the issue on lack of staff knowledge on HTN will bring positive social change to the staff and nurses. It will not only provide them current information on HTN management, but, most importantly, it will have a positive impact on patient health

outcomes. Improved staff education on HTN will eventually help patient health thus reducing the frequency of clinic visits due to HTN at an outpatient clinic in southern US and preventing unnecessary mortality and morbidity.

Section 4: Findings and Recommendations

Introduction

The project stemmed from a gap in practice among the nursing staff on current HTN management guidelines at an outpatient clinic in the southern United States. I surmised that the learning gap among the staff was a contributory factor to the emergent problem observed among hypertensive patients who frequent the facility. The patients lacked knowledge on ways to modify their lifestyle to reduce their blood pressure and, thus, returned frequently to the facility with the same, if not worse, complaints. I hypothesized that updating staff knowledge on lifestyle modification activities to improve HTN would enable these health care providers to better educate hypertensive patients to self-manage their symptoms and diagnosis. To fill the gap in staff knowledge, I created an educational module on a current lifestyle modification program based on JNC-8 and ACC guidelines (Davis, 2015), which I then submitted for approval to a panel of reviewers, and eventually presented to clinic staff. The focus of the project was twofold: (a) to collect evaluation results from a panel of experts and integrate their ideas to improve module content and its applicability to the staff and clinic and (b) to implement the module and subsequently, assess staff knowledge in educating patients in their self-management of a HTN diagnosis. In this section, I will discuss the findings and implications, offer recommendations, consider the strength and limitations of the project, and summarize key points in the conclusion.

Findings and Implications

In developing the educational module, I sought to determine whether an educational module on HTN, directed towards nursing staff in an outpatient clinic in the southern United States, would improve nursing care for patients diagnosed with HTN. The module presentation had two phases. Phase 1 involved presentation to a panel of experts for evaluation while Phase 2 involved presentation to the clinic staff. Results will be discussed according to each phase.

Phase 1: Panel Evaluation

Three expert panelists were present during the evaluation (n = 3). Panel questions are summarized based on module content, the handout, and overall recommendations (see Tables 1 to 3). In terms of module content, Questions 1, 2, and 4 indicated the panel's strong agreement that the module was clearly presented, easily comprehended, and well-organized (see Table 1). Two of the three panelists also strongly agreed that the module appropriately contains information that will increase staff knowledge on HTN (See Question 7 in Table 1).

Table 1

Panel Questions on Module Content (n = 3)

Question	Strongly disagree	Disagree	Strongly agree	Agree
1. The instructional material was well-organized.	0	0	3	0
2. The instructional material illustrated the concepts well.	0	0	3	0

table continues

Question	Strongly disagree	Disagree	Strongly agree	Agree
4. The content of the handout was clear and easy to comprehend.	0	0	2	1
7. The handout materials and the content of presentation contained educational information to increase staff knowledge on HTN.content of the handout was clear and easy to comprehend.	0	0	2	1

Table 2 shows panel answers that strongly agreed that the module handout is an important component of the module. They further agreed that the handout was a useful reference for staff to use in educating HTN patients. Overall, the entire panel recommended the module and all related materials for use at the clinic. Regarding Question 8, two of the panel strongly agreed that the module deserves to be recommended for staff presentation on HTN education (see Table 3). In fact, all three panel contributors indicated that the module satisfied the educational objectives of the outpatient clinic based on all their answers on Question 3, as also shown in Table 3.

Phase 2: Staff Survey

After the panel evaluation and obtainment of recommendations, I presented the module to the outpatient clinic staff (n = 5). Participants were asked to answer a set of questions before and after the module presentation to determine their knowledge about HTN diagnosis and management. Tables 4 and 5 include a summary of participant responses for the pretest and posttest, respectively.

Pre-test questions. Results of the pretest survey questions revealed incorrect and insufficient baseline knowledge of HTN by outpatient clinic staff. Specifically, Questions 1, 3, 4, 5, 7, 8, and 9 show participant answers that falls within the following categories: *Completely Disagree*, *Somewhat Disagree*, and *Neither Agree or Disagree* (see Table 4). These questions pertained to participant knowledge on JNC-8 and ACC guidelines (Questions 1, 7), identification of HTN (Questions 3, 8), and management (Questions 5, 9). Regarding Questions 1 and 9, all of the participants (100%, $n = 5$) disagreed with JNC-8 and ACC guidelines on lifestyle modification and nurse education on patient self-management (see Table 4). The same trend is seen for Question 3 where 100% of the participants disagreed with the statement that "The goal for treating primary hypertension is BP <130/80mm Hg." However, with regard to participant knowledge on contributory factors to HTN (Question 8), 40% ($n = 2$) were somewhat in agreement with the question statement; the majority (60%, $n = 3$) was still nevertheless in disagreement (see Table 4). In terms of HTN management, participant answers revealed general disagreement on Question statements (see Questions 5 and 9 in Table 4).

Despite these data findings that point to the lack of staff knowledge on HTN, there were exceptions. For example, in Question 2, all of the participants agreed to the definition of HTN (see Table 4). In addition, participant answers to Question 6 show that 40% ($n =2$) of participants agreed that they are knowledgeable about the complications of HTN (see Table 4).

Post-test questions. Immediately after the module presentation, I asked the outpatient clinic staff to answer a posttest questionnaire. Table 5 shows a summary of

participant results. In all the questions, participants were in agreement with the question statements on HTN diagnoses, JNC-8 and ACC lifestyle guidelines management, and nurse assistance in patient education. Furthermore, all of the participants (100%, *n* =5) found the module useful in increasing their knowledge and awareness of JNC-8 HTN management (see Questions 9 and 10 in Table 5).

In summary, module evaluations indicated that the participants lacked sufficient knowledge of HTN before the module presentation. Then, after the module presentation, the outpatient clinic staff were provided with correct and updated information on HTN for use in improving patient self-care and management of hypertension. Panel evaluation and survey question results provided data to support the claim that the module increased staff knowledge on HTN.

Recommendations

Creation of the module on HTN was a response to the knowledge gap seen among the outpatient clinic staff. In particular, a module based on JNC-8 and ACC lifestyle modification for HTN management was deemed to be adequate for staff learning, since this was the recommendation by the panel evaluators when the DNP student was creating the module. The panel indicated that such a module has the potential to increase staff knowledge on HTN lifestyle modifications which will make a social change in the life of patients by encouraging them to live a healthy lifestyle that will bring improved health outcomes. Nursing staff education has the potential to increase staff knowledge, empowering both staff and patients to promote a positive social change through improved health care outcomes.

Following are additional recommendations for teaching patients how to self-manage their HTN.

- an intervention through education of the staff about the self-efficacy of proper patient HTN management using JNC-8/ACC guidelines and treatment on the lifestyle modification;
- an intervention by educating staff about the proper management of patients with HTN, which includes instruction on proper assessment, detection, early intervention, and treatment by staff/nurses to manage HTN;
- an intervention by incorporating HTN education into the outpatient clinic to instill knowledge and management of HTN and to prevent blood pressure elevations and HTN complications;
- an intervention by providing education in medication adherence for patients diagnosed with HTN; and
- an intervention by integrating treatment based on HTN treatment guidelines.

These recommendations can be achieved if the medical director convenes a staff meeting where communication between staff and clinic leaders are open and welcoming. In doing so, she can relay her observation about patients repeatedly visiting the clinic with the symptoms of hypertension – headache and elevated/uncontrolled blood pressure. During this meeting, the medical director might also point out the important role of clinic staff in minimizing patient visits and improving patient health. She should also emphasize that role of clinic staff can be improved through education in the form of module on

hypertension, and that staff has a key role in teaching patients how to self-manage their hypertension.

Strengths and Limitations

The strength of the DNP project lies in its pre-approval by a panel of experts who reviewed the module before presentation to the intended audience. This afforded the DNP student with much guidance in the EBP guideline to use that is likely guaranteed to find its utility towards the target population. The panel input proved to be effective in the module creation because post-test survey question results show improved knowledge on HTN by the clinic staff.

The major limitation of the project was in its small sample size. The project was created with only one outpatient clinic in mind, and the small staff that accompanies it. However, despite its small sample size, the clinic still has the issue of filling the knowledge gap so the DNP student did not let that hinder the research process.

Future recommendation for a project includes longer time to monitor staff acquisition and retention of knowledge on hypertension, and their ability to transfer knowledge on hypertension self-management from staff to patient. The improvement of patient health is the primary goal of this exercise, so there should be more time devoted to monitoring this element.

Table 2

Panel Questions on Module Handout (n = 3)

Question	Strongly disagree	Disagree	Strongly agree	Agree
5. The handout materials given are likely to be used as a future reference	0	0	3	0
6. The handout materials given were appropriate for the activity.	0	0	3	0

Table 3

Panel Questions on Recommendation (n = 3)

Question	Strongly disagree	Disagree	Strongly agree	Agree
3. The instructional material met the course objectives.	0	0	3	0
8. I am likely to recommend the presentation on HTN for staff educations.	0	0	2	1

Table 4

Results of Pretest Survey Questions (n = 5)

Question	Completely disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Completely agree
1. According to JNC-8 and ACC, hypertension can be controlled by lifestyle modification, such as low salt intake, increase exercise, moderation of alcohol consumption.	60% (*n* = 3)	40% (*n* = 2)	0% (*n* = 0)	0% (*n* = 0)	0% (*n* = 0)

table continues

Question	Completely disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Completely agree
2. Hypertension is defined as persistent systolic blood pressure (SBP) 130 mm Hg, diastolic blood pressure (DBP) 80 mm Hg, or current use of antihypertensive medication.	0% (*n* = 0)	0% (*n* = 0)	0% (*n* = 0)	20% (*n* = 1)	80% (*n* = 4)
3. The goal for treating primary hypertension is BP <130/80 mm Hg.	60% (*n* = 3)	40% (*n* = 2)	0% (*n* = 0)	0% (*n* = 0)	0% (*n* = 0)
4. "Hypertension is a silent killer" means that it is frequently asymptomatic until it becomes severe and target organ disease occurs.	0% (*n* = 0)	60% (*n* = 3)	40% (*n* = 2)	0% (*n* = 0)	0% (*n* = 0)
5. Hypertension can be detected and managed by monitoring the B/P and following the guideline treatment of lifestyle modification.	40% (n = 2)	0% (n = 0)	60% (n = 3)	0% (n = 0)	0% (n = 0)
6. Complications of hypertension are hypertensive heart disease, brain (cerebrovascular disease), peripheral vasculature, peripheral vascular disease), kidney nephrosclerosis, and eyes retinal damage.	0% (*n* = 0)	20 % (*n* = 1)	40% (*n* = 2)	20 % (*n* = 1)	20 % (*n* = 1)
7. Hypertension can be managed by nurses through patient education based on JNC-8 guideline of hypertension management.	40% (*n* = 2)	0% (*n* = 0)	60% (*n* = 3)	0% (*n* = 0)	0% (*n* = 0)
8. High sodium intake, aging, high cholesterol, high alcohol intake, family history and inactivity can contribute to hypertension.	20 % (*n* = 1)	20 % (*n* = 1)	20 % (*n* = 1)	40% (*n* = 2)	0% (*n* = 0)
9. Patient education on self-management of hypertension will assist in patient being able self-manage their diagnosis.	60% (*n* = 3)	40% (*n* = 2)	0% (*n* =0)	0% (*n* =0)	0% (*n* =0)

Table 5

Results of Posttest Survey Questions (n = 5)

Question	Completely disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Completely agree
1. According to JNC-8 and ACC, hypertension can be controlled by lifestyle modification, such as low salt intake, increase exercise, moderation of alcohol consumption.	0% (*n* = 0)	0% (*n* = 0)	0% (*n* = 0)	40% (*n* = 2)	60% (*n* = 3)
2. Hypertension is defined as persistent systolic blood pressure (SBP) 130 mm Hg, diastolic blood pressure (DBP) 80 mm Hg, or current use of antihypertensive medication.	0% (*n* = 0)	0% (*n* = 0)	0% (*n* = 0)	0% (*n* = 0)	100% (*n* = 5)
3. The goal for treating primary hypertension is BP <130/80 mm Hg.	0% (*n* = 0)	0% (*n* = 0)	0% (*n* = 0)	40% (*n* = 2)	60% (*n* = 3)
4. “Hypertension is a silent killer" means that it is frequently asymptomatic until it becomes severe and target organ disease occurs.	0% (*n* = 0)	0% (*n* = 0)	0% (*n* = 0)	40% (*n* = 2)	60% (*n* = 3)
5. Hypertension can be detected and managed by monitoring the B/P and following the guideline treatment of lifestyle modification.	0% (*n* = 0)	0% (*n* = 0)	0% (*n* = 0)	0% (*n* = 0)	100% (*n* = 5)
6. Complications of hypertension are hypertensive heart disease, brain (cerebrovascular disease), peripheral vasculature, peripheral vascular disease), kidney nephrosclerosis, and eyes retinal damage.	0% (*n* = 0)	0% (*n* = 0)	0% (*n* = 0)	20% (*n* = 1)	80% (*n* = 4)
7. Hypertension can be managed by nurses through patient education based on JNC-8 guideline of hypertension management.	0% (*n* = 0)	0% (*n* = 0)	0% (*n* = 0)	0% (*n* = 0)	100% (*n* = 5)
8. Nurses can serve as educators and facilitators to help patients make lifestyle changes that will prevent hypertension and its complications.	0% (*n* = 0)	0% (*n* = 0)	0% (*n* = 0)	20% (*n* = 1)	80% (*n* = 4)

table continues

	Question	Completely disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Completely agree
9.	The staff educational module has helped to increase my knowledge and awareness of JNC-8 HTN Management.	0% (n = 0)	0% (n = 0)	0% (n = 0)	0% (n = 0)	100% (n = 5)
10.	Taking the educational program has changed the way I think about hypertension and screening among patients not previously diagnosed.	0% (n = 0)	0% (n = 0)	0% (n = 0)	0% (n = 0)	100% (n = 5)

Summary

The project demonstrated that the educational module provided an updated information on HTN that the clinic staff needed to help patient improve self-management of their hypertension diagnosis. This was evidenced by results from panel evaluation and survey questions given the participants before and after module presentation. Despite the small sample size of this project, it is highly recommended that regular educational modules be conducted so nurse knowledge is current so good patient health outcome is always prioritized.

Section 5: Dissemination Plan

The forum that will be suitable for disseminating project results is a similar outpatient clinic that provides care for hypertension patients. I anticipate that similar outpatient clinics will benefit from dissemination of the project results for they provide a means of providing additional education to nurse staff who lack knowledge on HTN management and treatment guidelines for patients. The educational module could be used for in-service hours for nurses and staff who lack knowledge of HTN by JNC-8 guidelines. Furthermore, the project includes information and links to websites where more information regarding the JNC-8 can be searched. These resources may also assist staff in the proper management of patients with HTN.

In addition, I view the project as being appropriate for dissemination in scholarly journals such as *Journal of Hypertension Management* and via health care publishers such as Ovum and Cochrane. Publishing project results would provide other researchers with evidence-based health information on HTN management for use in their studies. EBP provides nurses with methods to use critically appraised and scientifically proven evidence for delivering quality care health information (Davis, 2015).

Analysis of Self

My journey within the DNP project experience has helped me with knowledge acquisition and the development of library research skills. In completing the literature review, I searched for information about EBP that is effective in the education of staff/nurses who lack knowledge on how to properly educate patients diagnosed with HTN and how to teach these patients to become self-sufficient in managing their HTN

and treatment. These steps were in line with the guidelines outlined in *The Essentials of Doctoral Education for Advanced Nursing Practice* (American Association of Colleges of Nursing, 2006) where a doctoral student is expected to "utilize science-based knowledge as the basis for the highest level of nursing practice upholding the highest ethical and legal standards" (Essential I; page 8) and also to "disseminate through scholarship evidence-based knowledge to improve healthcare outcomes of the patient who are diagnosed with hypertension" (Essential III; page 11). Eventually, I plan to disseminate the information from the project to health care publishers such as Ovum and Cochrane so that health care providers can access this research information to support the provision of good clinical care to their patients. My goal and objective in project is to be able to apply the Doctor of Nursing Practice Essentials to manage patient health and illness by utilizing evidence-based practice and disseminating the information to nurses and health care publishers.

Summary

My goal and objective in practical experience during this project is to be able to apply the Doctor of Nursing Practice Essentials of being able to manage patient health and illness by utilizing evidence-based practice and being able to disseminate the evidence-based practice information provided by nursing and health care publishers. I was able to accomplish this through the creation of the module and its presentation to a clinic staff in an outpatient clinic in southern US. Implementation of the module provided the nurse staff with improvements in their knowledge of HTN management, which has

the potential for transfer of knowledge to patients on proper self-management of their hypertension diagnosis.

References

American Association of Colleges of Nursing. (2006, October). *The essentials of doctoral education for advanced nursing practice*. Retrieved from http://www.aacnnursing.org/Portals/42/Publications/DNPEssentials.pdf

American College of Cardiology. (2017). *2017 guideline for high blood pressure in adults.* Retrieved from http://www.acc.org/latest-in-cardiology/ten-points-to-remember/2017/11/09/11/41/2017-guideline-for-high-blood-pressure-in-adults

American Family Physician. (2014). JNC 8 guidelines for management of hypertension in adults. *American Family Physician, 90*(7), 503-504. Retrieved from https://www.aafp.org/afp/2014/1001/p503.html

American Nurses Association. (2015). *2015 Annual report: Ethical practice, quality care*. Retrieved from https://www.nursingworld.org/~48deb3/globalassets/docs/ana/2015-ana-annual-report.pdf

Barnes, D., & Lu, J. (2012). Mexican immigrants' and Mexican Americans' perceptions of hypertension. *Quality Health Research, 22*(12), 1685-1693. doi: 10.1177/1049732312458181

Brown, M. T., Bussell, J., Dutta, S., Davis, K., Strong, S., & Mathew, S. (2016). Medication adherence: Truth and consequences. *American Journal of the Medical Sciences*, *351*(4), 387-399. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/27079345

Buttaro, T. M., Trybulski, J., Polgar-Bailey, P., & Sandberg-Cook, J. (2012). *Primary care -- E-book: A collaborative practice*. St. Louis, MO: Elsevier Mosby.

Centers for Disease Control and Prevention, Division for Heart Disease and Stroke Prevention. (2016). High blood pressure fact sheet. Retrieved from https://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_bloodpressure.htm

Dasgupta, K., Padwal, R., Poirier, L., & Quinn, R. R. (2015). Managing hypertension: Evidence supporting the 2013/2014 recommendations of the Canadian Hypertension Education Program. *Canadian Medical Association Journal*, *187*(2), 116-119. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4312151/

Davis, A. H., & Kimble, L. P. (2011). Human patient simulation evaluation rubrics for nursing education: Measuring the essentials of baccalaureate education for professional nursing practice. *Journal of Nursing Education*, *50*(11), 605-611. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/21751764

Davis, L. L. (2015). Hypertension guidelines: Evidence-based treatments for maintaining blood pressure control. *Gender & Development, 40*(6), 32–37. Retrieved from https://ncbi.nlm.nih.gov/pubmed/25922904

Dimeo, F., Pagonas, N., Seibert, F. S., Arndt, R., Zidek, W., & Westhoff, T. H. (2012). Aerobic exercise reduces blood pressure in resistant hypertension. *Hypertension, 60*(3), 653–658. Retrieved from https://www.ahajournals.org/doi/pdf/10.1161/HYPERTENSIONAHA.112.197780

Fort, M., Alvarado-Molina, N., Peña, L., Montano, C., Murrillo, S., & Martínez, H. (2013). Barriers and facilitating factors for disease self-management: a qualitative analysis of perceptions of patients receiving care for type 2 diabetes and/or hypertension in San José, Costa Rica and Tuxtla Gutiérrez, Mexico. *Family Practice, 14*(1), 131. doi: 10.1186/1471-2296-14-131

Gibbons, R.J., Smith, S.C., and Antman, E.M. (2003). American College of Cardiology/American Heart Association Clinical Practice Guidelines: Part I Where Do They Come From? *Circulation,* 107(23), 2979-2986. Accessed April 18, 2018. Retrieved from http://circ.ahajournals.org/content/107/23/2979

Go, A. S., Roger, V. L., Lloyd-Jones, D. M., Benjamin, E. J., Berry, J. D., Borden, W. B., & Turner, M. B. (2013). Heart disease and stroke statistics-2013 update: A report from the American Heart Association. *Circulation, 127*(1), e6–e245. doi:10.1161/CIR.0b013e31828124ad

Hacihasanoğlu, R., & Gözüm, S. (2011). The effect of patient education and home monitoring on medication compliance, hypertension management, healthy lifestyle behaviors and BMI in a primary health care setting. *Journal of Clinical Nursing*, *20*(5-6), 692-705.doi:10.4103/1947-2714.103314

Herttua, K., Tabák, A. G., Martikainen, P., Vahtera, J., & Kivimäki, M. (2013). Adherence to antihypertensive therapy prior to the first presentation of stroke in hypertensive adults: population-based study. *European Heart Journal*, *34*(38), 2933-2939

Hodges, B. C., & Videto, D. M. (2014). *Assessment and planning in health programs (2nd Ed.).* Sudbury, MA: Jones & Bartlett Learning.

Hochbaum, G., Rosenstock, I., & Kegels, S. (1952). Health belief model. *United States Public Health Service*.

Ioannidis, J. P. (2018). Diagnosis and treatment of hypertension in the 2017 ACC/AHA guidelines and in the real world. *Jama*, *319*(2), 115-116. doi:10.1001/jama.2017.19672

Marshall, A., Nazroo, J., Feeney, K., Lee, J., Vanhoutte, B., & Pendleton, N. (2016). Comparison of hypertension healthcare outcomes among older people in the USA and England. *Journal of Epidemiology and Community Health*, *70*(3), 264–270. doi: 10.1136/jech-2014-205336

McCance, K. L., Huether, S. E., Brushers, V. L., & Rote, N. S. (2010). *Pathophysiology: The biologic basis for disease in adults and children (6th Ed.).* St. Louis, MO: Elsevier Mosby.

McEwen, M., & Wills, E. M. (2014). *Theoretical basis for nursing (5th Ed.)*. Lippincott Williams & Wilkins Health.

Onoruoiza, S. I., Musa, A., Umar, B. D., & Kunle, Y. S. (2015). Using health belief model as an intervention to noncompliance with hypertension information among hypertensive patient. *IOSR Journal of Humanities and Social Science, 20*(9), 11-16.

Page, M. R. (2014, January). *The JNC 8 hypertension guideline: An in-depth guide*. Retrieved from https://www.ajmc.com/journals/evidence-based-diabetes-

management/2014/january-2014/the-jnc-8-hypertension-guidelines-an-in-depth-guide

Paula, T. P., Viana, L. V., Neto, A. T., Leitão, C. B., Gross, J. L., & Azevedo, M. J. (2015). Effects of the DASH diet and walking on blood pressure in patients with type 2 diabetes and uncontrolled hypertension: A randomized controlled trial. *Journal of Clinical Hypertension, 17*(11), 895–901. Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/jch.12597/full

Petipirin, A. (2016). *From Novice to Expert*. Retrieved from https://www.scribd.com/doc/261171036/patricia-benner-from-novice-to-expert

Rimando, M. (2015). Perceived barriers to and facilitators of hypertension management among underserved African American older adults. *Ethnicity & Disease*, *25*(3), 329.

Stone, N. J., Robinson, J. G., Lichtenstein, A. H., Bairey Merz, C. N., Blum, C. B., Eckel, R. H., Wilson, W. F. (2013). ACC/AHA guideline on the treatment of blood cholesterol to reduce atherosclerotic cardiovascular risk in adults. *Circulation, 129*(25), 216-223. doi:10.1161/01.CIR.0000437738.63853.7a

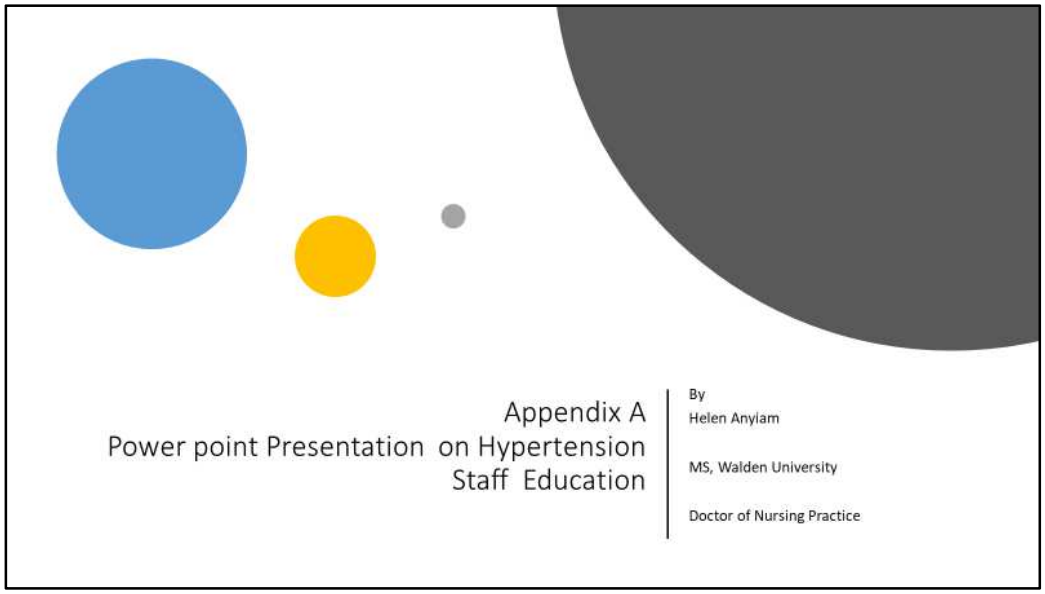
Terry, A. (2015). *Clinical research for the doctor of nursing practice.* Sudbury, MA: Jones & Bartlett Learning.

Thomas, C. M., & Kellgren, M. (2017). Benner's novice to expert model: An application for simulation facilitators. *Nursing Science Quarterly, 30*(3), 227–234. Retrieved from http://journals.sagepub.com/doi/10.1177/0894318417708410

Zaccagnini, M., & White, K. (2010). *The Doctor of Nursing Practice Essentials*. Burlington MA: Jones & Bartlett Publishers.

Appendix A: Educational Module on Hypertension

Lecture Presentation



Learners Objectives. Upon completion of this program, the learner will be able to

- Define hypertension
- Recognized elevated blood pressure
- Utilize the JNC 8 hypertension treatment guideline in managing hypertension.
- Develop awareness of American college cardiology hypertension guideline for treating hypertension.
- Recommend Lifestyle modification for patient with hypertension
- Recognize the risk factors of hypertension
- Be aware of hypertension symptoms
- Know goal treatment of hypertension

What is Blood Pressure

Blood Pressure is just as it sound is the pressure of circulating blood in the blood vessel and large arteries.

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

What is normal Blood Pressure

- Hypertension is defined based on medical standards set by the American College of Cardiology (ACC). Currently, the threshold for increased blood pressure is based on a reading of 130/80 mmHg or above. (American College of Cardiology, 2017).

Causes of Hypertension

- High Sodium intake
- Aging
- High cholesterol
- High Alcohol intake
- Family History
- Inactivity

Symptoms of Hypertension

Risk Factors of Hypertension

- High sodium intake
- Inadequate intake of Potassium
- Sedentary lifestyle
- Too much Alcohol consumption
- stress

Complications of Hypertension

- Stroke
- Renal Failure
- Aneurysm
- Heart Failure
- Weakens and narrow blood pressure

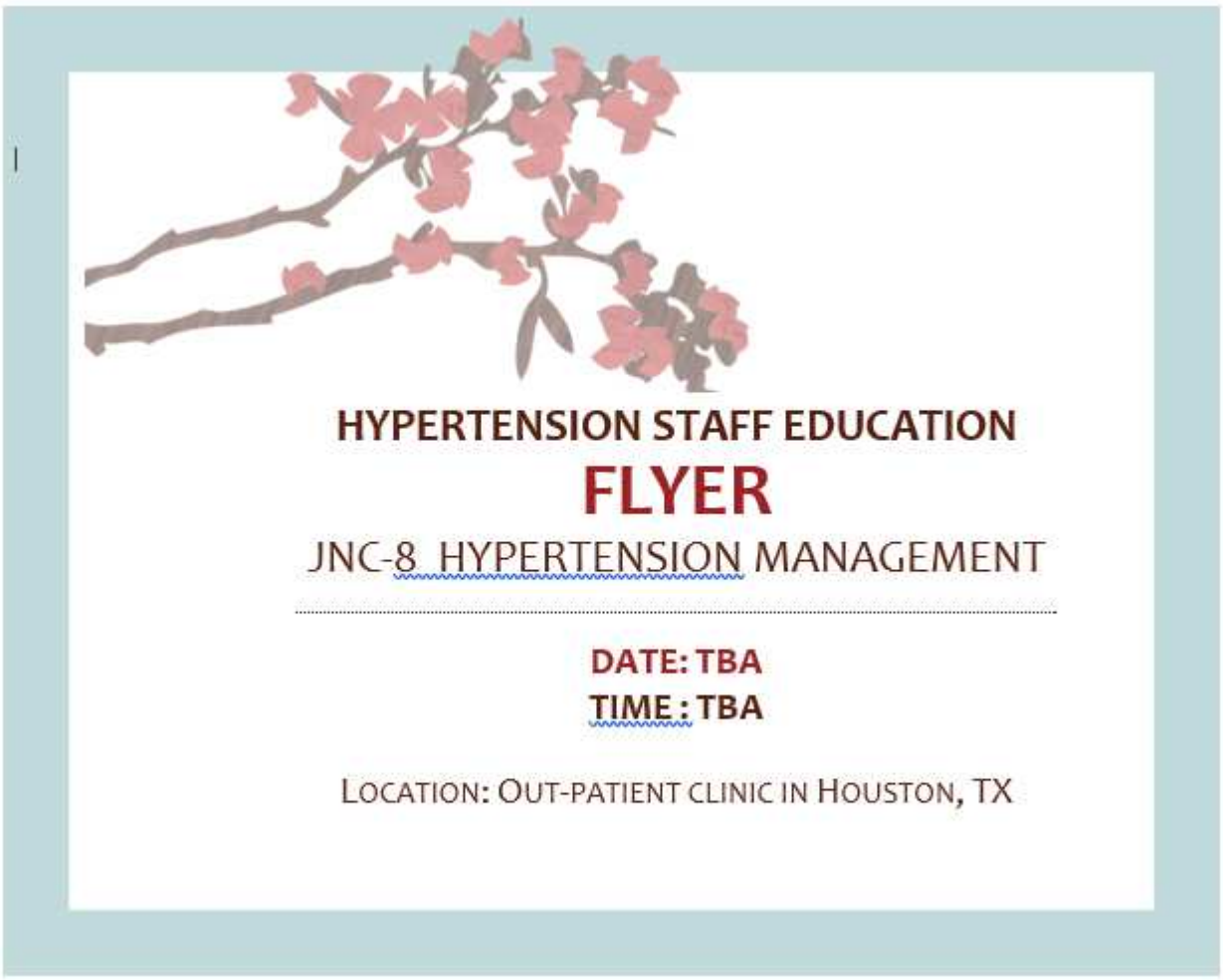
The JNC-8 Lifestyle Modifications Are

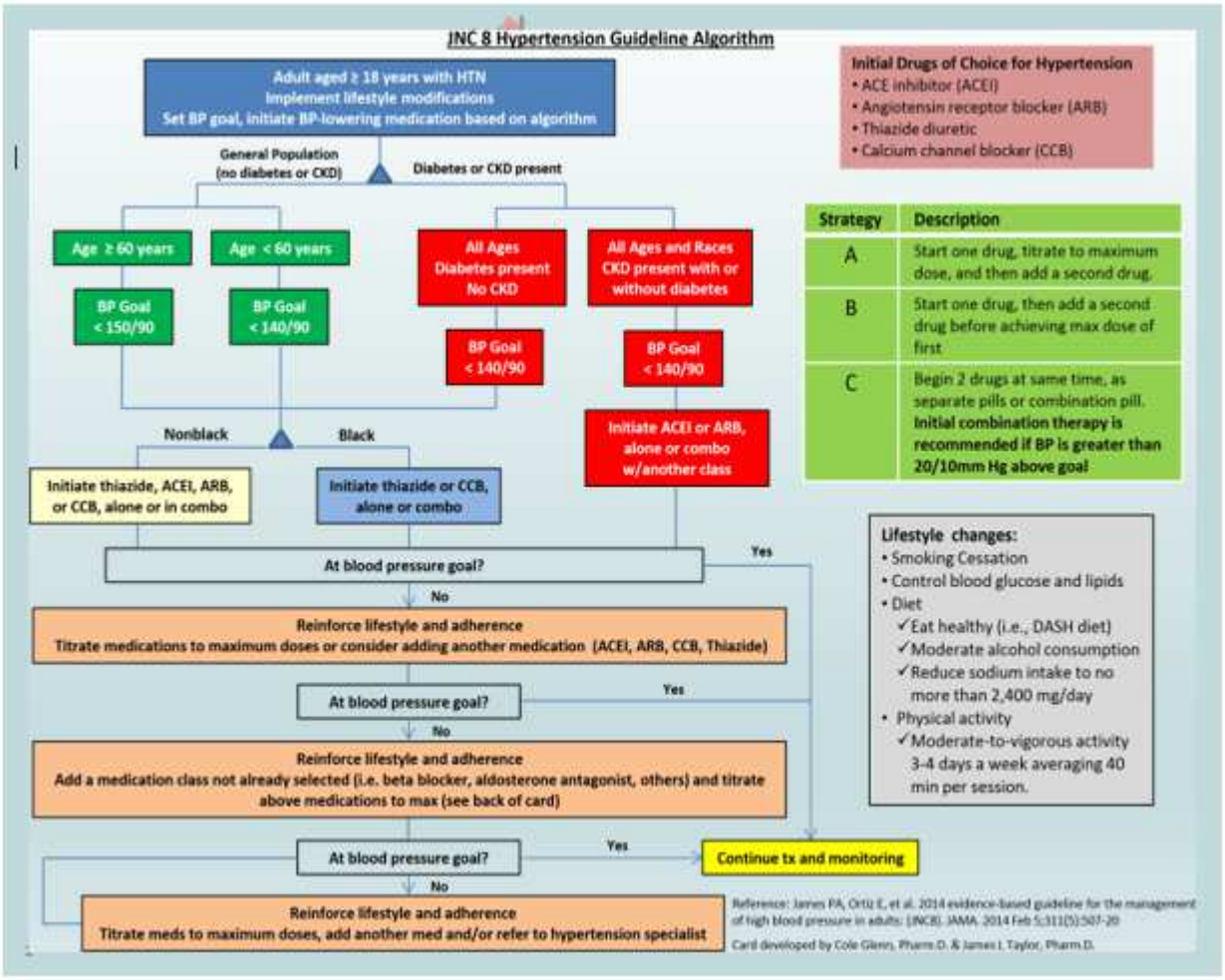
- Smoking Cessation
- Control blood glucose and lipids
- Healthy diet ie DASH diet
- Moderation in Alcohol intake
- Reduce Sodium Intake to no more than 2,400 mg/day
- Physical Activity: Moderate to vigorous activity 3-4 days a week average of 40 minutes per section
- (JNC,2018)

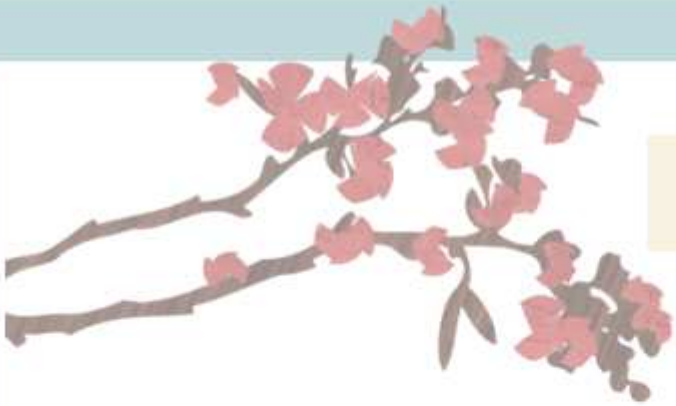
ACC Lifestyle Modification for controlling HTN

- Dash diet
- Healthy diet , Low Sodium intake, Dietary Potassium intake
- Physical Activity
- Moderate Alcohol Intake
- Weight loss

Handout


HYPERTENSION STAFF EDUCATION
FLYER
JNC-8 HYPERTENSION MANAGEMENT
DATE: TBA
TIME : TBA
LOCATION: OUT-PATIENT CLINIC IN HOUSTON, TX


JNC 8 Hypertension Guideline Algorithm
Adult aged ≥ 18 years with HTN
Implement lifestyle modifications
Set BP goal, initiate BP-lowering medication based on algorithm
General Population (no diabetes or CKD)
Diabetes or CKD present
Age ≥ 60 years
Age < 60 years
All Ages Diabetes present No CKD
All Ages and Races CKD present with or without diabetes
BP Goal < 150/90
BP Goal < 140/90
BP Goal < 140/90
BP Goal < 140/90
Nonblack
Black
Initiate thiazide, ACEI, ARB, or CCB, alone or in combo
Initiate thiazide or CCB, alone or combo
Initiate ACEI or ARB, alone or combo w/another class
At blood pressure goal?
Yes
No
Reinforce lifestyle and adherence
Titrate medications to maximum doses or consider adding another medication (ACEI, ARB, CCB, Thiazide)
At blood pressure goal?
Yes
No
Reinforce lifestyle and adherence
Add a medication class not already selected (i.e. beta blocker, aldosterone antagonist, others) and titrate above medications to max (see back of card)
At blood pressure goal?
Yes
Continue tx and monitoring
No
Reinforce lifestyle and adherence
Titrate meds to maximum doses, add another med and/or refer to hypertension specialist
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, Oparil S, 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.



FOR MORE INFORMATION CONTACT:
CONTACT NAME @TELEPHONE

Below are List of Websites for More Information for Hypertension Management

Family Physicians their Web site https:/www.aafp.org>afp>2018

American College of Cardiology
www.acc.org

American Heart Association
www.heart.org

The heart foundation
https://phasssociation.org

JNC 8 Guideline for HTN management
www.nmh.net>ddocument>27JNC8H

5

Appendix B: Panel Evaluation Questions Based on Hypertension Education Module

Directions: Please check in the box if you strongly disagree, disagree, agree or strongly disagree with each question.

	Strongly disagree	Disagree	Agree	Strongly disagree
1. The instructional Material was well organized.				
2. The handout materials given are likely to be used as a future reference.				
3.The instructional material illustrated the concepts well.				
4. The content of the handout was clear and easy to comprehend.				
5. The handout materials and the content of the presentation contains educational information to increase staff knowledge on HTN				
6. The handout materials given were appropriate for the activity				
7. I am likely to recommend the presentation on HTN for staff education.				
8. The instructional material met with the course goal objectives				

9. Please provide any recommendations for improvement of the presentation:

_____

_____

Appendix C: Summary of Survey Questions

1. According to JNC-8 and ACC, hypertension (HTN) can be controlled by lifestyle modification, such as low salt intake, increase exercise, moderation of alcohol consumption.
2. HTN is defined as persistent systolic blood pressure (SBP) 130 mm Hg, diastolic blood pressure (DBP) 80 mm Hg, or current use of antihypertensive medication.
3. The goal for treating primary HTN is BP <130/80 mm Hg.
4. “Hypertension is a silent killer" means that it is frequently asymptomatic until it becomes severe and target organ disease occurs.
5. HTN can be detected and managed by monitoring the B/P and following the guidelines treatment of lifestyle modification.
6. Complications of HTN are hypertensive heart disease, brain (cerebrovascular disease), peripheral vasculature, peripheral vascular disease), kidney nephrosclerosis, and eyes retinal damage.
7. HTN can be managed by nurses by educating patient on the JNC-8 and ACC guideline of HTN management.
8. Nurses can serve as educators and facilitators to help patients make lifestyle changes that will prevent HTN and its complications.
9. I plan to include HTN screening as a part of every patient visit in the future.
10. The staff educational module has helped to increase my knowledge and awareness of JNC-8 and ACC HTN management.

Appendix D: Survey Questions: Pretest

Please read each of the following statements and check the appropriate box 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 post-test survey for identification purposes.

Please use the following scale for your responses: 1 = Completely Disagree, 2 = Somewhat Disagree, 3 = Neither Agree nor Disagree, 4 = Somewhat Agree, 5 = Completely Agree.

	1	2	3	4	5
1. According to JNC-8 and ACC, hypertension (HTN) can be controlled by lifestyle modification, such as low salt intake, increase exercise, moderation of alcohol consumption.					
2. HTN is defined as persistent systolic blood pressure (SBP) 130 mm Hg, diastolic blood pressure (DBP) 80 mm Hg, or current use of antihypertensive medication.					
3. The goal for treating primary HTN is BP <130/80 mm Hg.					
4. “Hypertension is a silent killer" means that it is frequently asymptomatic until it becomes severe and target organ disease occurs.”					
5. HTN can be detected and managed by monitoring the B/P and following the guideline treatment of lifestyle modification.					
6. Complications of HTN are hypertensive heart disease, brain (cerebrovascular disease), peripheral vasculature, peripheral vascular disease), kidney nephrosclerosis, and eyes retinal damage.					
7. HTN can be managed by nurses through patient education based on JNC-8 guideline of HTN management.					
8. High sodium intake, aging, high cholesterol, high alcohol intake, family history and inactivity can contribute to HTN.					
9. Patient education on self-management of HTN will assist in patient being able self-manage their diagnosis.					

Appendix E: Survey Questions: Posttest

Please complete the survey question by checking the box with response based on your current knowledge after the Hypertension Staff Education Module presentation.

Please place your pre-test number in the upper right-hand corner of this questionnaire for matching purposes.

Please use the following scale for your responses: 1= Completely Disagree 2= Somewhat Disagree 3=Neither Agree nor Disagree 4= Somewhat Agree 5= Completely Agree.

	1	2	3	4	5
1. According to JNC-8 and ACC, HTN can be controlled by lifestyle modification, such as low salt intake, increase exercise, moderation of alcohol consumption.					
2. HTN is defined as persistent systolic blood pressure (SBP) 130 mm Hg, diastolic blood pressure (DBP) 80 mm Hg, or current use of antihypertensive medication.					
3. The goal for treating primary HTN is BP <130/80 mm Hg.					
4. “Hypertension is a silent killer" means that it is frequently asymptomatic until it becomes severe and target organ disease occurs.					
5. HTN can be detected and managed by monitoring the B/P and following the guideline treatment of lifestyle modification.					
6. Complications of HTN are hypertensive heart disease, brain (cerebrovascular disease), peripheral vasculature, peripheral vascular disease), kidney nephrosclerosis, and eyes retinal damage.					
7. HTN can be managed by nurses through patient education based on JNC-8 guideline of hypertension management.					
8. Nurses can serve as educators and facilitators to help patients make lifestyle changes that will prevent HTN and its complications.					
9. The staff educational module has helped to increase my knowledge and awareness of JNC-8 HTN Management.					
10. Taking the educational program has changed the way I think about hypertension and screening among patients not previously diagnosed.					

Appendix F: Site Approval Documentation for Staff Education Doctoral Project

Partner Site

Contact Information

Date

The doctoral student, is involved in Staff Education that will be conducted under the auspices of our organization. The student is approved to collect formative and summative evaluation data via anonymous staff questionnaires, and is also approved to analyze internal, de-identified site records that I deem appropriate to release for the student's doctoral project. This approval to use our organization's data pertains only to this doctoral project and not to the student's future scholarly projects or research (which would need a separate request for approval).

I understand that, as per DNP program requirements, the student will publish a scholarly report of this Staff Development Project in ProQuest as a doctoral capstone (with site and individual identifiers withheld), as per the following ethical standards:

a. In all reports (including drafts shared with peers and faculty members), the student is required to maintain confidentiality by removing names and key pieces of evidence/data that might disclose the organization's identity or an individual's identity or inappropriately divulge proprietary details. If the organization itself wishes to publicize the findings of this project that will be the organization's judgment call.

b. The student will be responsible for complying with our organization's policies and requirements regarding data collection (including the need for the site IRB review/approval, if applicable).

c. Via a Consent Form for Anonymous Questionnaires, the student will describe to staff members how the data will be used in the doctoral project and how the stakeholders' autonomy and privacy will be protected.

I confirm that I am authorized to approve these activities in this setting.

Signed,
Authorization Official Name
Title