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Hypertension Health Literacy Education for Unlicensed Assistive Living Facility Staff

Rhonda Gary Jackson
Walden University

Walden University

College of Nursing

This is to certify that the doctoral study by

Rhonda Gary Jackson

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.

Review Committee
Dr. Joan Hahn, Committee Chairperson, Nursing Faculty
Dr. Robert McWhirt, Committee Member, Nursing Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2023

Abstract

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Project Submitted in Partial Fulfillment

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Doctor of Nursing Practice

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Abstract

The Centers for Disease Control and Prevention in 2021 estimated that approximately 47% of American adults have hypertension (HTN) and that 24% of Americans are health illiterate. The practice-focused problem for this Doctor of Nursing Practice project addressed health literacy (HL), a core element of patient-centered care in every patient-care setting, including assistive living facilities with unlicensed staff. At the project site, unlicensed staff members' low HL about HTN was recognized due to the lack of formal training and an absence of HL assessments as an employment requirement. Initially, an educational booklet regarding managing HTN was used for teaching, and the 22-item Hypertension Knowledge-Level Brazilian Scale (HK-LS) was used as both a pre- and posttest to evaluate learner gain. Upon completing the educational module and posttest, a Likert scale was presented to the six participants to determine their perception of their role in managing HTN and how they benefitted from it. Of the 22 pretest items on the HK-LS, only 5 received a response greater than 83% correct. This result confirmed a knowledge gap regarding HTN complications, such as hypertensive heart disease, cerebrovascular disease, peripheral vascular disease, kidney nephrosclerosis, and retinal damage. The difference in the mean pretest/posttest total scores was 19.69, increasing from 68.18% to 87.87%, indicating that the education module increased the staff's knowledge of HTN. This project is intended to improve staff HL, which has the potential to promote sustained positive social change for residents with HTN.

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Dedication

This project is dedicated to my grandmother, father, birth mother, Barbara, Jean Laundry, and adoptive mother, Carol. You all made me who I am—thanks to June Prance, my gifted editor and dearest friend.

Acknowledgments

I thank Dr. Joan Hahn, whose weekly consultations guided me on this journey. I would also like to thank Dr. Robert McWhirt, my committee member, who provided scholarly direction.

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Section 1: Nature of the Project

Studies have demonstrated that approximately 47% of American adults have hypertension (Centers for Disease Control and Prevention [CDC], 2021) and that 24% of Americans are health illiterate (CDC, 2022). “Health literacy (HL) skills are a social determinant of health, and strong skills mitigate health problems and risks,” according to Green (2017), Associate Professor of Pediatrics and Director of the Pediatric New American Clinic, University of Vermont, Burlington. Adequate HL is demonstrated by the critical skills of reading and understanding health-related written language, the interactive skills to make informed decisions and communicate with healthcare professionals, and the numeracy skills to measure medication dosages (Berkman et al., 2011; Nutbeam, 2010).

It is safe to state that the effects of *HTN* are a significant public health problem worldwide. People with HTN and those providing care for those with HTN will need to have higher HL to understand better how to manage this condition. Unlicensed staff members with low HL are recognized as a significant risk factor in blood pressure control and have an adverse effect on health outcomes (Pandit et al., 2009; Son et al., 2012).

The CDC (2022a) defines personal health literacy as "the degree to which individuals can find, understand, and use information and services to inform health-related decisions and actions for themselves and others" (para. 2). Individual HL empowerment can be more effective in a symbiotic relationship with organizations collaborating to create a strategy for achieving health promotion and risk prevention through improving global HL (Palumbo, 2016). The significance of this union is

identified in Healthy People 2030. Healthy People 2030 stresses the importance of an organization's role in fostering individual HL. Healthy People 2030 defines organizational HL as "the degree to which organizations equitably enable individuals to find, understand, and use information and services to inform health-related decisions and actions for themselves and others" (Office of Disease Prevention and Health Promotion, 2021). Not only does HL need to be addressed for the residents of an assistive living facility (ALF) but addressing HL among the staff increases awareness of personal and organizational HL. At the project site, the staff's abilities in HL were questionable due to the lack of formal training and an absence of HL assessments as an employment requirement. For this project, I developed a staff education program for unlicensed staff at an ALF to address HTN among residents using a HL enhancement approach.

A positive social change is surmisable by increasing the HL of these specific staff members. This project was designed to enhance the quality of patient care in assisting vulnerable adult residents living in the ALF to address their health, primarily related to HTN.

Problem Statement

The practice-focused problem for this Doctor of Nursing Practice (DNP) project addressed HL, a core element of patient-centered care in every patient care setting, including ALFs (Nutbeam, 2008). In ALFs, unlicensed and informally trained medication technicians disperse medication and prepare meal plans for residents with HTN and other medical conditions. More specifically, this project assessed the degree of

functional, critical, and interactive skills associated with adequate HL through a staff education program to assist these staff in managing residents with HTN.

Sources have identified the significance of the worldwide impact of HL. They have recognized the relevance of HL's global impact as essential in enhancing clinical outcomes in vulnerable populations (European Innovation Partnership on Active and Healthy Ageing, 2012). The definition of vulnerable populations is subjective but identifies a disadvantaged population based on their limitations or status. In ALFs, this population includes vulnerable adults who are dependent on the assistance of others, most often unlicensed staff, whose personal HL will guide their ability to assist those vulnerable adults they support.

This project addresses the importance of quality and safety as identified in Domain 5 of the DNP Essentials (American Association of Colleges of Nursing, 2006). Per the Institute of Medicine (IOM, 2001), quality care is how care services improve desired health outcomes and are consistent with patient preferences and current professional knowledge. HL among healthcare workers can be considered an essential variable in the health system to promote desired health outcomes within a community (Baker, 2006). Hence, staff HL education is warranted, considering that the unlicensed staff in an ALF are not required to have professional knowledge, nor are they required to provide meals based on the patient's medical condition preferences. This project's implementation can potentially improve the desired health outcomes of ALF residents by addressing the contributors and barriers related to staff HL HTN. Doctorate-prepared nurses are positioned to address quality and safety improvement because of their

advanced level of knowledge and duty to adhere to their ethical code (American Nurses Association, 2015).

Purpose Statement

Through this project, I sought to identify how HTN health literacy education of unlicensed ALF care staff may improve staff HL about HTN and promote staff empowerment. The practice-focused question for this project was the following: To what extent does a HTN educational program based on evidence-based literature demonstrate increased HTN knowledge among ALF medication technicians?

This project addressed a gap in practice related to a knowledge deficit amongst unlicensed staff in an ALF. The literature suggests that individuals with inadequate HL are less likely to understand information about medications' correct name, dosage, and administration frequency than those with adequate HL (Backes & Kuo, 2012; Marvanova et al., 2011). This project's aim was to disclose the relevance of primary HTN health education so that these unlicensed caregivers could better comprehend their role in educating their residents about HTN modification behaviors.

Nature of the Doctoral Project

This DNP project addresses HL related to primary health knowledge and lifestyle modification involved with HTN management. The nature of this project originates from my experience working as a provider in various ALFs. When inquiring about a patient's medications, the staff could not identify which medications were related to HTN or diabetes. This basic level of HL is not a requirement for employment for these staff. When Florida residents need supervision to manage their medications in an ALF, they

rely on medication technicians to assist them. The medication technician certification course consists of 6 hours of training regarding assistance with self-administered medications in an ALF. Given that this position requires only a high school diploma, the parallel degree of HL (as it relates to a high school diploma) will be elementary.

A study conducted in 2017 in the United States suggested that millions of people are affected by low HL (Baker et al., 2014; Hickey et al., 2018). According to a 2006 U.S. Department of Education report, 53% of adults had moderate HL, 22% had basic HL, 14% had inadequate HL, and only 12% had good HL (Kutner et al., 2006). Evidence for this project that was generated to assess staff HL before and after the training included the use of the Brazilian version of the Hypertension Knowledge-Level Scale (Arthur et al., 2018) found in Appendix A, which is a modified version of the Turkey Hypertension Knowledge-Level Scale (Baliz et al., 2012). It has been deemed a reliable instrument to construct and validate measured knowledge about HTN. Pretests and posttests were administered to determine if there were changes in staff knowledge regarding HTN HL.

Health education is crucial for preventing health problems because gaining HL is instrumental in making informed choices regarding treatment and understanding the implications of these decisions (Motta et al., 2018). The promotion of better blood pressure control requires functional knowledge about the disease. Staff are instrumental in assisting residents at this ALF. This education was developed to gauge their HTN HL.

Significance

Stakeholders involved in this project consisted of owners, staff, and residents. At this location, the owners designate the management of residential medications and meals to the medical technicians or staff at the ALF. The owners are responsible for hiring and training these staff members, including the 6-hour course required for the medical technician position. As state law requires, the owners provide a licensed or registered nurse to take the provider's orders, forward them to the pharmacy, and confirm that they are correct before entering them into the patient's medication case. Medications are reviewed monthly by a registered nurse, and a licensed dietician develops annual meal plans. Residents depend on their level of competence to deliver their care.

This project's implementation and summary of this project potentially impact on each of the stakeholders. Owners will obtain the analysis of the pre-/ posttest results and consider incorporating this survey (or one similar to it) as part of the orientation process for new employees and annual education. The nurses involved in the supervision of medications may be influenced to ask pointed questions in verbiage present within the survey and modules presented to the unlicensed staff. This line of inquiry will provide the licensed staff with relevant clinical data, foster more effective communication, and reflect the unlicensed team's improved interactive HL skills.

Summary

Globally, HTN and health illiteracy have negatively impacted the lives of many. This education project addressed the unlicensed staff of an ALF. Through the project, I aimed to improve the staff members' HL related to HTN and a Dietary Approaches to

Stop Hypertension (DASH) diet. The overall alignment of this project parallels the practice gap identified in assessing the HL of unlicensed staff designated to provide medication and meals for patients with HTN—provision of the Brazilian Hypertension Knowledge scale (Arthur et al., 2018) as the pre- and posttest and introduction. The two HL training modules that were developed contain information about HTN for the unlicensed caregivers presented in the interim. After the posttest, a Likert Scale for Med Techs was provided to gauge the participant's subjective perception of the DNP staff education project experience.

Section 2 will address this project's clinical background and relevance to nursing practice. Section 2 will also provide the clinical environment of the issue, including a discussion of the Florida employment requirements for unlicensed staff in ALFs and the rationale for and selection of the theoretical framework used for this project. Additionally, my role in this project as a DNP student and the relevance of this project to nursing practice will be discussed.

Section 2: Background and Context

This project was designed to identify how HTN health illiteracy education of unlicensed ALF care providers may positively impact their perception of HTN and their role in patient care. The practice-focused question that guided the project was the following: To what extent does a HTN educational program based on evidence-based literature demonstrate increased HTN knowledge among ALF medication technicians?

This section addresses the concepts of health illiteracy and HTN education and their influence on staff and the residents they serve. I also discuss Pender's theory and the ADDIE model, how they were used to frame this project, and my role in bridging the practice gap at this location.

Concepts, Models, and Theories

Promoting change while protecting the autonomy of staff can be conducted using a systematic approach and through the methods of midrange models (European Innovation Partnership on Active and Healthy Ageing, n.d.). Pender's health promotion model was selected for this project to guide the content developed for the education modules.

Pender's Health Promotion Model

Using Pender's nursing theory health promotion model (HPM), researchers have been able to predict adherence to health-promoting behaviors in the fields of mental health as well as those behaviors associated with maintaining physical fitness. The HPM aims to provide how a person can pursue better health or ideals by identifying the impact of their perceptions. According to Pender, the HPM makes four assumptions:

1. Individuals strive to control their behavior.
2. Individuals work to improve themselves and their environment.
3. Health professionals comprise the interpersonal environment, which influences individual behaviors.
4. Self-initiated change of individual and environmental characteristics is essential to changing behavior.

Pender's model explains that acknowledging undesired behaviors is essential in predicting the barriers to obtaining program goals. These obstacles related to achieving a healthy diet will provide the blueprints for managing undesired behaviors (e.g., adding salt to meals; smoking) and facilitating desired ones (e.g., engaging in exercise) through the application of Pender's health belief model (HBM).

These problems are associated with nonadherence to healthy lifestyles and warrant a model concerned with the steps needed to achieve desired outcomes**.** Goldman and Schmalz (2001) described theories as "summaries of formal or informal observations, presented systematically, that help explain, predict, describe, or manage behavior" (p. 277).

The multifactorial variables associated with uncontrolled HTN include poor medication adherence, lifestyle choices, and the need to improve patient awareness (DiMatteo et al., 2012). Each variable is relative to the effects of compromised HL and the ability to make a sound health-related decision.

ADDIE Model

The DNP manual was resourced to develop the staff education program and design using the ADDIE model (see Appendix B), Pender's health promotion model, and theoretical support from the literature and other evidence. The ADDIE model provides a systematic process that educators can utilize for adult learners. This cyclical model has five stages: analyze, design, develop, implement, and evaluate. Each step proceeds into the next stage and includes opportunities to gather feedback that promotes additional development. Development of the staff education program will consist of a sample questionnaire review with the organizational leadership and a small selection of participants from one of their sister facility locations to gain a content expert review. Progression of the program will occur after completing this sample questionnaire and evaluating the data collected from the participants.

Concepts

The following key concepts were pertinent to this project.

Health education: Teaching and learning processes that promote healthy lifestyles and improve quality of life (Fereidouni et al., 2019).

Health literacy (HL): "The evolving skills and competencies needed to find, comprehend, evaluate, and use health information and concepts to make educated choices, reduce health risks, and improve quality of life" (Zarcadoolas et al., 2005, p. 198). HL is not just individual capacities but is also related to handling the healthcare system's demands and complexities (CDC, 2020).

Lifestyle changes: All positive and healthy changes that patients are required to make for better health outcomes involving diet, exercise, quitting smoking, maintaining weight, avoiding and limiting alcohol intake, maintaining blood pressure, and managing stress (American Heart Association [AHA], 2017).

Medication technicians: Requirements are a high school diploma or GED certificate. Duties and responsibilities are reviewing patient records, preparing proper dosages, distributing medications to residents, documenting all medicines taken to ensure patient forms are current, and coordinating medication changes, refills, and deliveries with physicians and pharmacies.

Organizational health literacy: This is the degree to which an organization implements policies, practices, and systems that "make it easier for people to navigate, understand, and use information and services to take care of their health" (Brach et al., 2012, p. 1).

Personal health literacy: The CDC (2022) defines personal HL as "the degree to which individuals can find, understand, and use information and services to inform health-related decisions and actions for themselves and others" (para. 2).

Relevance to Nursing Practice

HL is crucial for managing HTN, and nurses have long been recognized as educators. The skills necessary to address low HL are associated with nursing (Bass et al., 2002; Rogers et al., 2006; Seligman et al., 2005). However, unfortunately, many health professionals, including nurses, often lack adequate awareness and understanding of caregivers' HL issues (Kelly & Haidet, 2007; Macabasco-O'Connell & Fry-Bowers,

2011). Available data suggest that healthcare professionals only routinely use a few general HL practices (Castro et al., 2007; Schwartzberg et al., 2007; Turner et al., 2009).

Health Literacy and Caregivers

Caregivers are essential in providing practical and physical support to people with chronic conditions or physical impairments (Gibson, 2013; Reinhard et al., 2008). An unlicensed caregiver in an ALF is responsible for administering medications and preparing meals. Responsibilities included in this role include self-management support activities such as accessing/understanding health information, communicating with healthcare providers, coordinating support services, and participating in health decision-making and problem-solving (Barlow et al., 2002; DuBenske et al., 2010). In such instances, caregivers' HL may be critical regarding their level of functional, imperative, and interactive skills (Gibson, 2013; Reinhard et al., 2008).

A systematic review by Yuen et al. (2018) explored the HL levels of caregivers of adult care recipients. Low caregiver HL was associated with poorer care recipient self-management behaviors. Low HL levels in caregivers have negatively impacted cancer survivors' care provision and health outcomes (Yuen et al., 2018). Yuen et al. made recommendations to address strategies that improve caregiver HL.

Health Literacy

Barrett et al. (2008) defined HL as patient-centered protocols and strategies to minimize low or limited HL. HL is critical to effective health communication to achieve desired patient outcomes and lower national mortality rates (Berkman et al., 2010). In 2006, more than 33% of U.S. adults had a low HL (Kutner et al., 2006).This percentage is

over the generalized U.S. adult population and is considerably higher in a general population at a greater risk of illiteracy. HL was noted as a factor in controlling blood pressure among patients (Shi et al., 2017).

Strategies to Address Health Literacy

The World Health Organization (WHO) has addressed the issue of HL for almost two decades. A significant gain in examining the relationship between HL and health outcomes has come from work undertaken as a part of the European Health Literacy Survey (HLS-EU; Sørensen et al., 2015). Most global policies and strategies acknowledge that the health system's responsiveness to patient HL needs to be improved. Such strategies are the national policies for improvements of adult literacy and language programs (United States), the role of the education sector in HL, providing better quality consumer information on products (Austria), and increasing public awareness of HL (Scotland).

A systematic review conducted by Charoghchian Khorasani et al. (2020) suggested that although addressing HL at an organizational level is complex, it is a priority to address it organizationally. This review addresses HL in developing a staff education program to promote desired health outcomes.

Local Background and Context

The project location was an ALF in central Florida, and I received verbal approval followed by written site approval from facility leadership to use this site for this DNP project. While the number of residents can vary depending on the housing layout, this ALF has 40 apartments or units. As with other ALFs, this ALF does not require a

dietician or nutritionist to oversee meal planning and provision of well-balanced meals. That responsibility is delegated to informally trained and unlicensed staff members with unspecified levels of HL. Based on the state requirement for this position, the Florida Medication Administration Training program (6 hours) covers the required training for unlicensed staff involved with managing medications and assisting with self-administration under Florida State Rule 65G-7 Medication Administration. Unlicensed staff (no prerequisites or experience required) must complete this initial 6 hours of training provided by an Agency for Persons With Disabilities (APD)-approved trainer using an APD-provided or approved training course before assisting a resident with self-administrating medications.

ALF residential placement is typically assigned to individuals who can independently perform basic activities of daily living (ADLs) but require assistance with more advanced movements. These activities include medication dispensing, transportation, and meal preparation. Onsite health care providers, housekeeping, recreation, and mobile diagnostic studies provide additional services. Patients who reside in ALFs are charged a monthly copayment, which can result in a significant financial burden to patients and their families, mainly since many insurances do not cover the expense of residing in an ALF. The key staff who focused on this education project were those hired in medication technician roles.

The State of Florida and Federal Contexts

Per the Florida Census, 21% of Floridians are 65 and over. Based on their age and the prevalence of HTN, many of these Floridians will sustain HTN-related conditions and

may warrant the services provided in an ALF. Based on the definition of HTN used in 2003, the Joint National Committee (JNC) 7 guidelines based the definition of HTN as an SBP of 140 mm Hg or greater or diastolic blood pressure (DBP) of 90 mm Hg or greater (or both), it is estimated that 72 million (or about 1 in 3) adult Americans have HTN. Data derived from the National Health and Nutrition Examination Survey indicate that 70% of older adults have HTN (Mozaffarian et al., 2015).

Florida is home to 2,000 ALFs statewide; as per the Genworth Study on long-term care costs across the United States, the price for an ALF in Florida averages about $3,045 per month ($36,540 per year), although the cost for care increases depending on the services required. The average price of an ALF in Tampa, FL, is $3,350 per month. Medical technicians are used to disperse medications, prepare meals, and assist with ADLs to curtail the cost of care for this population.

Florida has the third-highest percentage of adults lacking basic prose literacy skills, at 19.7%, equaling a literacy rate of 80.3% (World Population Review, 2023). Based on these and other data related to Florida's 19.7 % adult literacy deficits (World Population Review, 2023), establishing the level of HL for this unlicensed staff is warranted. In Florida, the essential requirement for the position of a medication technician (not to be confused with a pharmacy tech) is a high school diploma or equivalent. Based on the 2017 Florida census, there is a vast selection pool for this position because, according to the Census, 64.3% of the population has less than a degree-level education. Refer to Table 1.

Table 1

Education Level of Adult Floridians Over the Age of 25

Population 25 years and over	Florida Census 2021	%
	No degree	10%
	High school graduate (includes equivalency)	28%
	In some colleges, no degree	29%
	Bachelor's degree	21%
	Graduate or professional degree	13%

Note. From "American Community Survey 1-Year Estimates," by U.S. Census Bureau, 2021, Census Reporter (https://censusreporter.org/profiles/04000US12-florida/).

Role of the DNP Student

The role of a DNP nurse differs from that of a nurse prepared with a Master of Science in Nursing (MSN) not only in the responsibilities associated with a DNP, but also in the DNP nurse's position within the overall advancement of health care. As a nurse practitioner with an MSN, I focused on using and implementing evidence-based guidelines in direct patient care rather than using and applying evidence to address a gap in practice (e.g., developing training, creating policies, and evaluating quality improvement) to effect a change in the more advanced healthcare system. As a DNP, my role includes critiquing current approaches and examining their relevance to society's evolving healthcare needs. The effects of hypertension encompass not only the individual

but the community with which the individual identifies. When developing this project, I considered the cultural perception of wellness to create an HL module that addresses HL and common health disparities. Culture is defined as learned values, beliefs, and practices of a particular group of people “that guide thinking, decisions, and actions in patterned ways” (Leininger, 1995, p. 9). My role was to structure an education project that would promote this cultural sensitivity by identifying some ethnic-based foods as acceptable and accepting cultural definitions of "healthy" weight.

My role as an educator motivated me in this DNP project to review the literature and influence the development of evidence-based practice policies to determine the relevance of these concepts to current practices (Zaccagnini & White, 2014). Although I conducted this literature review to identify potential best practices that could be adapted to this project, I am aware of my own related bias. I have been subject to at least six pharmacology courses as a doctorate-prepared nurse. Many of these classes were more extended than 8 weeks, and I regard each course as vital for patient care. As a nurse practitioner, I must acknowledge the importance of medication technicians’ role and actively assist in enhancing their performance in medication administration and meal preparation. Based on this review of best practices, I prepared an educational presentation using different modalities to best meet adult learners' diverse needs. These modalities included didactic, case study, role-playing, observation, and problem-based learning modules.

Role of the Project Team

Planning this project began with a discussion with organizational leadership to analyze the needs associated with the staff education program goals to establish feasibility. I received a commitment of support from corporate leadership. The project's initiation originated with a project team's needs assessment discussion, background information, and a copy of the project proposal. Before implementation after Walden Institutional Review Board (IRB) approval, the need for and the approach to the project were validated, and the project was modified based on the team's feedback. The role delegation was planned to proceed in this manner:

1. I would be responsible for the development of the modules, execution of the project, and analysis of the data.
2. The director of nursing (DON) would concur if the module material was appropriate for the staff before the presentation.
3. The wellness coordinator would assist in coordinating weekly staff participation.
4. Before execution of the modules, the nutritionist assigned to this facility would review annual meal plans and be consulted regarding the material related to DASH and provide contextual insight.
5. The team would receive a copy of the completed project before implementation for review and comment.
6. I would review and make changes to the modules as relevant.

Summary

Pender's (2011) health promotion model was chosen to teach staff strategies to achieve the behavior change ALF residents need to make recommended lifestyle modifications to enhance hypertensive control constructs. In this section, I defined key terms and how they were utilized in the project, expressed the project's relevance to nursing, and explained why it was necessary for this local ALF. Additionally, the DNP student role and the role of the project team were addressed in this section. In Section 3, I will discuss collecting and analyzing the evidence using the ADDIE five-step model of analysis, design, development, implementation, and evaluation (Moradmand et al., 2014).

Section 3: Collection and Analysis of Evidence

HL is a global health promotion challenge in medication adherence and lifestyle changes in HTN management. Low HL among individuals and caregivers contributes to poor health outcomes due to inadequate knowledge of diseases and their management (Yin et al., 2007). The aim of this project was to develop an education program using a HL framework to prepare staff better. Implementing this staff educational program proceeded with the assistance of evaluation tools for continued assessment in relation to the fidelity of this program. Section 3 addresses the collection and analysis of evidence to answer the practice-focused question.

Practice-Focused Question

Based on the definition of HTN used in 2003, the JNC 7 guidelines define HTN as a systolic blood pressure (SBP) of 140 mm Hg or greater or diastolic blood pressure (DBP) of 90 mm Hg or greater (or both); it is estimated that 72 million (or about 1 in 3) adult Americans have HTN (Unger et al., 2022). As the U.S. population ages, over 75% will meet this criterion by their 80th year (CDC, 2021), and per the Florida Census 2021(Florida Department of Commerce (2021)21% of Floridians are 65 and over. Based on their age and the prevalence of HTN, many of these Floridians will sustain HTN-related conditions and may warrant the services provided in an ALF. Many of these health care services are by unlicensed staff who do not receive supervision from licensed health care providers. Therefore, many patients' healthcare-related issues are addressed at the discretion of this unlicensed staff.

This project was designed to identify how HTN HL education of unlicensed ALF care providers may positively impact their perception of HTN and their role in patient care. The practice-focused question that guided the project was the following: To what extent does a HTN educational program based on evidence-based literature demonstrate increased HTN knowledge among ALF medication technicians? Postimplementation data may demonstrate this staff's knowledge increase, which should correlate with a positive learning experience as evidenced through the Likert Scale for Med Techs.

Sources of Evidence

To justify the importance of this project, I reviewed the current data on global HTN HL rates among adults. Per the WHO (2016), low HL has been associated with fewer healthy choices, riskier health behavior, poorer health status, less self-management, higher costs, and inappropriate use of health services. Additional data reflect that low HL is more prevalent in demographic areas of lower socioeconomic status and lower degrees of education (Paasche-Orlow & Wolff, 2007). HL surveys have been widely used to assess participants' levels of HL. Unfortunately, many of these surveys address adult literacy and are not specific to HL. This project provided evidence that addresses HL among caregivers in an ALF for residents with HTN, a prevalent chronic illness among this residential population.

Evidence Generated for Doctoral Project

While it is essential to distinguish between general reading skills and HL (Nielsen-Bohlman et al., 2004; Sørensen et al., 2015), the correlation between participants' performance on measures of academic skills and HL has been identified as

evidence of the measures' validity (Parker et al., 1995). A lack of evidence-based interventions to assess the HL of medication technicians related to HTN was not seen at the project site. Therefore, I used Walden Library research databases such as CINAHL, ProQuest, Cochrane Library, PubMed, Ovid, Joanna Briggs Institute Evidence-Based Practice (EBP), and Google Scholar to gather evidence to support the content development of the modules for this project. Keywords used in the literature search were *health literacy*, *reading literacy*, *illiteracy*, *health education*, *lifestyle changes*, *cultural diversity*, *DASH*, *HTN*, *management program*, *American Heart Association*, *Healthy People 2020*, *social determinants of low health literacy*, and *organizational health literacy*. Articles were limited to those with a complete text—the search results were approximately 51 articles, of which I used roughly 44. The articles' topics related to HTN management, factors related to medication adherence, lifestyle changes, and the positive impact of enhancing caregivers' HL.

Participants

The overall alignment of this project parallels the practice gap identified in assessing the HL of unlicensed staff designated to provide medication and meals for patients with HTN. Inclusion criteria for participants required that they were hired as medication technicians employed by this ALF and that their responsibilities involved medication administration and meal preparation. Exclusion criteria applied to licensed staff members who did not possess those position requirements.

The caregiver staff who participated in the project were identified as the unlicensed staff, and the project objective was directed at improving the health illiteracy of this population as it relates to HTN, lifestyle modification, and a DASH diet.

Procedures

A procedural approach was used to determine the effectiveness of the educational intervention. The goal was to provide the unlicensed staff HTN-related education and to convey to the facility's administration the importance of HL screening. Modules were developed based on the Brazilian Hypertension Knowledge scale (Arthur et al., 2018) in consultation with the licensed staff on the DNP project team to ensure the material's accuracy and relevance. These developed modules were presented in a discussion group format to facilitate a learning approach enabling the unlicensed staff to use their acquired knowledge to support their learning.

Provision of the Brazilian Hypertension Knowledge scale (Arthur et al., 2018) as the pretest was conducted at the introduction of Module 1, with the posttest occurring after the completion of Module 2. The two HL training modules developed (see Appendix D, Appendix E) were intended to improve caregivers' knowledge of HTN or high blood pressure (HBP). These modules were derived from the HBP Self-Care Profile (HBP SCP), which was validated by Han et al. (2014), when presented, are relatively short (based on the 20 items for each scale), a 4-minute and 36-second video regarding blood pressure (see Appendix F), and a patient handout provided by Preventive Cardiovascular Nurse Association (Appendix G). Each module addressed 10 questions related to the HBP-SCP, and because the reading level was at the sixth-grade level, these

modules applied to a high school graduate as required by this position. A list of the 20 behaviors of the HSP-SCP is found in Appendix C.

After the posttest, a Likert-scale questionnaire, the Likert Scale for Med Techs, was provided to gauge the participants' subjective perception of the DNP staff education project experience (see Appendix D). A *t* test is the chosen method to analyze the pre- and posttesting data to determine the relevance of the two-part module intervention (Hwang et al., 2008). Following the analysis and synthesis at the project's conclusion, I will provide the evaluation of the project results and present recommendations to the owners and program stakeholders involved in the project.

Protections

This DNP project was conducted at an ALF in a central Florida city. The residents did not receive direct contact from me; only the staff involved were invited to participate in the project. Involved participants in the testing and education will not be identified, and all data will be devoid of descriptors. When the DNP manual for staff education (Walden University, 2019) is used, the Walden University IRB has preapproved that the data used may include the following:

1. Public data: Reports, websites, media coverage, publicly disseminated reports, public websites, and any information available.
2. Literature such as data books, peer-reviewed articles, and other bodies of written knowledge communicate theories and findings about practices relevant to the student's doctoral project.

3. Anonymous questionnaires are provided using a coding system to conduct pre- and posttesting to link a person's pretest and posttest scores.

In compliance with Walden University's (2019) staff education manual for DNP projects, the following two forms were obtained before the initiation of the intended DNP project:

- Site Approval Form for Staff Education Doctoral Agreement
- Consent Form for Anonymous Questionnaires

Implementation of this project proceeded once Walden IRB approval had been obtained (Approval # 11-18-22-1058178).

Analysis and Synthesis

An analysis plan was developed after I conferred with a Walden Office of Research and Doctoral Services staff methodologist regarding the method design for this project. I planned to use the Microsoft Office Excel spreadsheet in this DNP project to record and organize the data collected from the pre- and posttests. To determine a correlation, a paired-sample test using SPSS software was used to compare the two-test scores (pre- and post-test scores) to determine a correlation. This determined if the results from the educational module had a true positive impact in improving the HL of the nonlicensed staff.

Summary

This section provided the plan for collecting and analyzing evidence for this DNP project. The team analyzed the practice-focused question of whether staff education improved staff HL in the management of HTN patients through the implementation of the Brazilian Hypertension Knowledge scale (Arthur et al., 2018) and application of the HBP

SCP (Han et al., 2014), which was also used to guide the relevant content when creating the modules. The project team utilized evidence and operational data sources to explore the topic with evidence and validity tools. After receiving approval from Walden University's IRB, the plan was to present the staff educational package to the medication technicians in two modules. Educating staff to understand the essential life modifications needed in managing HTN and emphasizing the importance of their role may reduce the knowledge gap in this staff and equip them with the tools that will enable them to be more effective caregivers. In Section 4, I will discuss the project findings, implications, and project team recommendations to support quality improvements within the nursing practice while promoting positive social change.

Section 4: Findings and Recommendations

The purpose of the project was to promote and improve HL management of HTN by conducting a staff education project for unlicensed ALF staff. Data collected during this DNP project comprised quantitative results used to measure the outcomes and impact on the ALF caregivers' HL. Quantitative data included data collected during the initial phase while conducting the pre-/posttest. Quantitative data were collected via the Likert Scale for Med Techs survey, specifically from the participant's ordinal response regarding this educational experience. The primary practice-focused question for this project was the following: Will staff education on evidence-based guidelines improve the knowledge of unlicensed medical technician staff regarding managing HTN in an ALF setting?

Sources of evidence were from Walden Library, MEDLINE, Cochrane Library, PubMed, and Google Scholar. The search terms were *hypertension, hypertension control, health literacy, evidence-based approach to hypertension education, staff education on hypertension, Eight Joint National Committee guidelines, hypertensive patients,* and *staff knowledge of hypertension*. Using the obtained evidence, I developed the project education tools and modules. I chose the Brazil Hypertension Knowledge Scale tool (Arthur et al., 2018) after a review of evidence-based pretest and posttest questionnaires. Data collection and analysis of the evidence provided a means for addressing the DNP practice-focused question as determined from the ALF staff's pre-education and post education evaluation. In this section, I discuss the findings and implications of this DNP

project. I also summarize key points and offer recommendations considering the strengths and limitations of the project.

Findings and Implications

For this project, I sought to determine if unlicensed ALF staff knowledge was increased after receiving an education module on HTN control and management guidelines. The project location was an ALF located in the southeast United States. The intended role delegation proceeded in this manner:

1. I was responsible for the development of the modules, execution of the project, and analysis of the data.
2. The DON concurred that the module material was appropriate for the staff before the presentation.
3. The wellness coordinator assisted in coordinating weekly staff participation and providing the staff's work schedule.
4. Before the execution of the modules, the nutritionist assigned to this facility reviewed annual meal plans and was consulted regarding the material related to DASH and provided contextual insight.
5. The team received a copy of the completed project before implementation for review and comment.
6. I reviewed and made changes to the modules as relevant.

Planning this project began with a discussion with organizational leadership to analyze the needs associated with the staff education program goals to establish feasibility. I received a commitment of support from corporate leadership. Upon completion of the

project and after conferring with management regarding the project result, an action plan was developed to address the ongoing educational needs of medical techs. The project results validated the benefit of the project being conducted at their facility and identified the improvement of HTN HL within their staff. Hopefully, it will be disseminated within the facility's practices of managing residents with HTN.

Findings

Table 2 presents the pre- and posteducation mean item scores from the 22-item Brazilian version of the Hypertension Knowledge-Level Scale (Arthur et al., 2018) questionnaire with pre- and posttest results of the six participants. I selected the Brazil questionnaire based on its reliability and validity. The validity of the Brazilian version of the Hypertension Knowledge-Level Scale during its development was evaluated using the methods of the Cronbach's alpha statistical approach. A score of 0.74 supported the Brazilian version of the Hypertension Knowledge-Level Scale by Arthur et al. as a valid instrument (Hereibi et al., 2021). The 22-item tool has six categories or "subdimensions" (see Appendix A). Each item is scored by participants as "correct," "incorrect," or "I don't know." An answer key is also provided for grading the scale (see Appendix A).

The subdimensions are Definitions (Items 1 and 2), Drug Compliance (Items 3, 4, 5, and 12), Medical Treatment (Items 6–9), Lifestyle (Items 10, 11, 13, 16, and 17), Diet (Items 14 and 15), and Complications (Items 18–22).

After the nursing staff received the education module, they were asked to complete the post-test questionnaire. I instructed the participants to return the completed anonymous posttest questionnaire, fold it, and return it to me. The posttest questionnaire

was identical to the pretest questionnaire, which was also unidentified. None of the participants chose "I don't know" for any of the 22 questions on the posttest. The pretest had 16 items rated as "I don't know," which demonstrates that 100% of the participants who answered the posttest questionnaire were completely aware of the material's content and the complications of HTN. The pre- and posttest results with percentage changes are displayed in Table 2.

Findings by Category

HTN Definition—Items 1 and 2. Item 1, 2, and 3 posttest percentages demonstrate complete understanding by all participants that high systolic (maximum) or diastolic (minimum) blood pressure indicates increased blood pressure (taking medication, a medical treatment item) as evident in scores of 100%. Item 2 posttest percentages clarified that high diastolic blood pressures also indicate increased blood pressure, which is of vital importance in the identification of residents in need of lifestyle changes.

Drug Compliance—Items 3, 4, 5, and 12. Item 3 confirmed that all the participants understood that HTN is not a result of aging. Item 4 scored poorly due to the participants not understanding that medication and treatment are different. Posttest scores were disappointingly lower than pretest scores. This may be attributed to the ill-equipped knowledge base and my failure to translate this clinical evidence effectively. It is also possible that these questions were confusing, or that findings point out a continued gap in understanding about medications and HTN, suggesting that more content may be needed in this category.

However, Item 5 reflected successful knowledge integration with posttest scores of 100% and an understanding that even with lifestyle changes, the use of antihypertensive medication is warranted. Item 12 did not reflect complete understanding of the participants, but rather an increase of 16.66%. Several of the participants did not associate that monitoring the consumption of salt is a necessary HTN lifestyle change.

Lifestyle Items—10, 11, 13, 16, and 17. Those related to lifestyle changes presented the lowest score of all the categories. Of the items related to lifestyle changes, Items 10 and 13 scored 100%. This reflected participants' understanding of the need to incorporate more fruit and vegetables into their diet and to avoid fried foods. Item 17 signified that most of the participants understood that people with HTN should limit their alcohol consumption, with a notable posttest score of 83.33%. Although all posttest scores improved from the pretest, the scores on Items 11 and 16 were unsatisfactory. This is concerning because smoking and alternatives to frying were addressed and identified as indications for needed lifestyle changes. The results of these items confirmed the need for additional education regarding AHA guidelines for promoting the lifestyle modifications of reducing salt intake to no more than 2,400 mg a day, engaging in physical activity, and partaking in moderate-to-vigorous activities 3 to 4 days per week for an average of 40 minutes per session.

Diet Items. This result is exceptionally perplexing because Items 14 and 15 addressed diet, and the overall score was 83.33%. Explanation of the DASH initiatives for reducing salt intake, increasing physical activity, and promoting diets rich in vegetables, fruits, low-fat dairy, and lean protein; are included in the staff education This

is impressive considering that like other ALFs, this ALF is not required to have a dietician or nutritionist oversee meal planning and provision of well-balanced meals. That responsibility is delegated to informally trained and unlicensed staff members with unspecified levels of HL.

Complications Items. Most proudly, all five items (18–22) that addressed HTN-related complications scored 100% from the participants, indicating that the project was instrumental in increasing the knowledge base of this staff. The nonlicensed staff displayed an impressive increase in knowledge of HTN complications, such as hypertensive heart disease, cerebrovascular disease, peripheral vascular disease, kidney nephrosclerosis, and retinal damage.

Table 2

Pretest and Posttest Questions Results

Description	Category	Pre	Post	% change	Direction
1. High systolic (maximum) or diastolic (minimum) blood pressure indicates increased blood pressure.	Definitions	33.33%	100.00%	66.67%	↑
2. High diastolic blood pressure also indicates increased blood pressure.	Definitions	50.00%	100.00%	50.00%	↑
3. High blood pressure (HBP) is caused by aging, so it does not require treatment.	Drug compliance	100.00%	100.00%	0.00%	no change
4. If the medicine for HBP can control blood pressure, there is no need for treatment.	Drug compliance	83.33%	66.67%	-16.66%	↓
5. If people with HBP change their lifestyle, there is no need for treatment.	Drug compliance	83.33%	100.00%	16.67%	↑
6. People with HBP should take their medications as they believe it is the best way.	Medical treatment	50.00%	16.67%	-33.33%	↓
7. HBP medicine should be taken daily.	Medical treatment	83.33%	100.00%	16.67%	↑
8. People with HBP should take the medicines only when they feel bad.	Medical treatment	100.00%	100.00%	0.00%	100% no change
9. People with HBP should take their medication for the rest of their lives.	Medical treatment	33.33%	83.33%	50.00%	↑
10. For people with HBP, frying is the best food preparation method.	Lifestyle	100.00%	100.00%	0.00%	100% no change
11. For people with HBP, cooking only with water or grilling by the best way to prepare food.	Lifestyle	66.67%	66.67%	0.00%	66.67% no change
12. People with HBP can eat food without controlling the amount of salt provided they take the medication every day.	Drug compliance	66.67%	83.33%	16.66%	↑
13. People with HBP should eat fruits and vegetables often.	Lifestyle	83.33%	100.00%	16.67%	↑
14. The best type of meat for people with HBP is red meat.	Diet	50.00%	83.33%	33.33%	↑
15. That best type of meat for people with HBP is white meat.	Diet	50.00%	83.33%	33.33%	↑
16. People with HBP should not smoke.	Lifestyle	50.00%	66.67%	16.67%	↑

Description	Category	Pre	Post	% change	Direction
17. People with HBP can drink alcohol at will.	Lifestyle	50.00%	83.33%	33.33%	↑
18. If HBP is not treated, it can cause a stroke.	Complications	66.67%	100.00%	33.33%	↑
19. If HBP is not treated, it can cause a heart attack.	Complications	83.33%	100.00%	16.67%	↑
20. If HBP is not treated, it can lead to premature death.	Complications	83.33%	100.00%	16.67%	↑
21. If HBP is not treated, it may cause the kidneys to stop working.	Complications	66.67%	100.00%	33.33%	↑
22. If HBP is not treated, it can cause eye problems.	Complications	66.67%	100.00%	33.33%	↑
M		68.18%	87.89%	19.71%	↑

Likert Scale for Med Tech Results

The last phase of the project included the Likert Scale for Med Techs to determine the participants' evaluation of their learning experience from the educational modules. One hundred percent of the participants strongly agreed that their role is important in managing the residents' HTN and that the DNP education helped them understand HTN (Items 1 and 2). Of all the participants, 83.33% validated the impact of the education modules by strongly agreeing that they learned things that would help their residents and others regarding HTN (Items 4 and 5). Equally important and encouraging is that the participants were open to additional education regarding HTN management (Question 5). On three questions, 100% agreed or strongly agreed with the positive impact of this educational experience (see Table 3).

Table 3

*Likert Scale for Med Techs (*N = *6)*

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. My role is important in managing the resident's HTN.	0	0	0	0	6 (100%)
2. This DNP education helped me to understand HTN.	0	0	0	0	6 (100%)
3. I learned things that will help our residents.	0	0	0	1 (16.66%)	5 (83.33%)
4. I can use this education to help others outside our facility.	0	0	0	1 (16.66%)	5 (83.33%)
5. I would like to learn more about how to better manage hypertension.	0	0	0	1 (16.66%)	5 (83.33%)

Summary of Item Frequencies

The post education test revealed increased knowledge compared with the pre-education survey results, except for two items. The results of the tests overall showed that the unlicensed staff demonstrated an increase in their understanding of the recognition and management of HTN, as indicated in the AHA guidelines for the management of arterial HTN. Posttest answers suggested that the education program can create a positive patient outcome related to the care of patients with HTN: complications of HTN, diet changes, lifestyle changes, and self-management.

Paired Samples *t*-Test Findings

A paired samples *t* test was conducted to compare mean pretest and mean posttest scores of the six participants to determine if the evidence-based staff education program improved their HL related to HTN. The paired samples *t* test revealed that there was

sufficient evidence indicating that the educational intervention improved the knowledge of the medical technicians (see Tables 4, 5, and 6). The cumulative mean of all the items is reflected in Table 5. Scores on the posttest (M = 5.2727, SD = 1.20245) were higher than scores on the pretest (M = 4.0909, SD = 1.23091), $t(21) = -4.053$, $p < .001$, $df = 21$.

Table 4

Paired Samples Statistics

		Mean	*N*	Std. deviation	Std. error mean
Pair 1	VAR00001	4.0909	22	1.23091	.26243
	VAR00003	5.2727	22	1.20245	.25636

Table 5

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	VAR00001 & VAR00003	22	.369	.091

Table 6

Paired Samples Test

		Paired differences					*t*	*df*	Sig. (2-tailed)
					95% confidence interval of the difference				
		M	*SD*	Std. error M	Lower	Upper			
Pair 1	VAR00001 VAR00003	-1.18182	1.36753	.29156	-1.78815	-.57549	-4.053	21	.001

Implications

The question was as follows: Was there a significant change in the participants' Brazilian HL score following participation in the educational module provided in the DNP project? A paired sample *t* test helps determine if there is a difference in the mean score between two groups of one set of participants on two different occasions. This difference in the mean score will identify the significance of the scores between each group. In this case, the group is distinguished as the pretest and the posttest sample means . The differential difference between each question is reflected in Sig 2-tailed. If the *p-value* is less than 0.05, then this reflects a clinical significance. Items 8, 10, and 11 did not demonstrate change. Items 4 and 6 did not demonstrate meaningful change. All other items reflected clinical significance in change (see Figure 1).

Figure 1

Paired Samples t*-Test Findings*

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Z1 - X1	-.667	.516	.211	-1.209	-.125	-3.162	5	.025
Pair 2	Z2 - X2	-.500	.548	.224	-1.075	.075	-2.236	5	.076
Pair 4	Z4 - X4	.167	.408	.167	-.262	.595	1.000	5	.363
Pair 5	Z5 - X5	-.167	.408	.167	-.595	.262	-1.000	5	.363
Pair 6	Z6 - X6	.333	.516	.211	-.209	.875	1.581	5	.175
Pair 7	Z7 - X7	-.167	.408	.167	-.595	.262	-1.000	5	.363
Pair 9	Z9 - X9	-.500	.548	.224	-1.075	.075	-2.236	5	.076
Pair 11	Z11 - X11	.000	.632	.258	-.664	.664	.000	5	1.000
Pair 12	Z12 - X12	-.167	.408	.167	-.595	.262	-1.000	5	.363
Pair 13	Z13 - X13	-.167	.408	.167	-.595	.262	-1.000	5	.363
Pair 14	Z14 - X14	-.333	.816	.333	-1.190	.524	-1.000	5	.363
Pair 15	Z15 - X15	-.333	.816	.333	-1.190	.524	-1.000	5	.363
Pair 16	Z16 - X16	-.167	.983	.401	-1.198	.865	-.415	5	.695
Pair 17	Z17 - X17	-.333	.816	.333	-1.190	.524	-1.000	5	.363
Pair 18	Z18 - X18	-.333	.516	.211	-.875	.209	-1.581	5	.175
Pair 19	Z19 - X19	-.167	.408	.167	-.595	.262	-1.000	5	.363
Pair 20	Z20 - X20	-.167	.408	.167	-.595	.262	-1.000	5	.363
Pair 21	Z21 - X21	-.333	.516	.211	-.875	.209	-1.581	5	.175
Pair 22	Z22 - X22	-.333	.516	.211	-.875	.209	-1.581	5	.175

Strengths of the Project

The project's strength was the previous approval of the facility's administration content and no recommendations for improvement. This education program was provided to all medical tech staff, with staff posttest answers indicating knowledge of the AHA guidelines showing improvement from program pretesting. The willingness of the participants to voluntarily participate in this project and to learn new knowledge of current policies was an essential strength of the study. The dissemination of the content of this study will positively impact the context of this organization in their hiring and continuing education practices.

Limitations of the Project

The inability to follow up with the staff after education presents a limitation in determining the long-term impact of the staff's education. A modification occurred due to the decline of the staff/resident ratio. Previously, the ratio was 1 staff per 30, and now it is 1 per 40, which required me to omit the use of the video because of the inability of the staff to leave the units to view the video. The participants in the study comprised individuals with varying experience, use of English as a secondary language, education, and skills, which had limiting effects on the investigation results. In future project presentations with this group, due to the primary languages of the staff, providing the materials in the language of both Spanish and Creole would be helpful. Also, there is an inability to gauge the impact of this education on the residents' actual blood pressure due to unauthorized patient contact in DNP projects, which limits confirmation of the clinical effect of the education. Another limitation of this project is that participation was limited to one location and a small sample size. The small sample size determines the results applicable to other settings. Despite the small sample size, the primary purpose was enhancing the knowledge gap of the staff at this ALF, which the small sample size did not hinder.

Recommendations

The education module was created in response to the knowledge gap observed among the unlicensed staff at the ALF. The administration previewed the educational materials and deemed the education module adequate for teaching staff. They also anticipated that the education module would increase staff knowledge on HTN lifestyle

modifications, improving patients' lives by encouraging them to live healthier lifestyles and producing better clinical outcomes. It is recommended that the clinic's management undertake continued actions to initiate clinical policies, including scheduled staff education on patient HTN control, blood pressure control, and management. Hopefully, because of the positive impact of this project, the facility administration will encourage future DNP research projects at this location.

Section 5: Dissemination Plan

Disseminating the project's data and presenting it to leadership is essential to my role as a DNP student at this ALF. Additional ALFs in this network may benefit from transferring the educational project through staff in-services and job training, with scheduled in-services on the AHA guidelines. Publication of this project is being considered in literary forms that focus on managing HTN (Prevention), HL (Agency for Healthcare Research and Quality), or ALF management (Florida Agency for Health Care Administration) to an audience that presents an interest in hypertension, hypertension control, health literacy evidence-based approach to hypertension education, staff education on hypertension, Eight Joint National Committee guidelines, hypertensive patients, and staff knowledge of hypertension.

My focused publication group is specifically for journals interested in effectively educating staff who lack knowledge of the AHA guidelines and on how to inform the team to become self-aware of residents with HTN. These skills are part of the DNP learning process defined in *The Essentials of Doctoral Education for Advanced Nursing Practice* (American Association of Colleges of Nursing, 2006). My role with the staff will be to collaborate on ongoing education with the educator and assist in developing training materials, including the staff education module and implementation of patient education on managing HTN. The challenge is constructing reading material to enhance HL, including having materials available in English, Spanish, and Creole for this facility. After graduation, I asked the facility to permit me to run the HTN video (once staffing is optimal), and I must focus on ways to be available for potential staff education

opportunities to continue the momentum and further improve the HL of this unlicensed staff. One of my recommendations is that a generalized HL exam is included as part of medical technicians' orientation and training process. Additionally, I suggested that the administration facilitate regular collaborations between the kitchen staff and the dietician. If the dietician is not an option, then perhaps the assigned facility educator would be.

Analysis of Self

The effects of this DNP journey have enhanced my scholarly writing development through knowledge acquisition and the strengthening of library database search skills. My literature review required that I search out various self-assessment HL tools specifically for effectively educating staff who lack knowledge of the AHA guidelines and how to inform the staff to become self-aware of residents with HTN. These skills are part of the DNP learning process defined in *The Essentials of Doctoral Education for Advanced Nursing Practice* (American Association of Colleges of Nursing, 2006).

My role with the staff will consist of collaborating with their leadership team, providing ongoing educational opportunities with the educator, and assisting in developing training materials, including the staff education module and implementation of patient education on managing HTN. The challenge is constructing reading material available in English, Spanish, and Creole. After graduation, I must focus on ways to be available for ongoing staff education opportunities.

Summary

A growing body of literature addresses the HL levels of caregivers of adult care recipients and the association of low caregiver HL with poorer care recipient self-

management behaviors (Yuen et al., 2018). This project is based on a gap in the HL recognized among unlicensed staff of an ALF, targeted explicitly to treating and managing HTN. This DNP project aimed to develop and teach the unlicensed staff of a HTN-related education program to evaluate its effectiveness in increasing knowledge, and to convey to the facility's administration the importance of HL screening as part of the employment orientation process.

My goal for performing the project was to control and manage HTN using the AHA guidelines and the Brazilian Hypertension Knowledge Level Scale (Arthur et al., 2018) as both the pretest and posttest to educate staff. Afterward, I constructed an education module using the AHA patient handbook and presented it to the non-licensed staff who participated in this study at an ALF in Florida. After the educational program, findings supported that the staff had an improved knowledge base and gained a greater understanding of the importance of adhering to the AHA guidelines in managing HTN. The results reinforced the need for a similar assessment of staff knowledge to be incorporated in the orientation process that may include a basic HL scale and build upon baseline skills with an ongoing educational program that facilitates progressive staff knowledge on evidence-based guidelines for controlling and managing HTN.

The Likert Scale for Med Techs provided me with a quantitative assessment of the participant’s perception to measure the degree of their DNP project educational experience. Based on the high scores evident on both the posttest and the Likert Scale, it is concluded that the project had a significant positive clinical impact in the improvement of HTN-related HL in the non-licensed staff at this ALF.

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Appendix A: The Brazilian Version of the Hypertension Knowledge-Level Scale

Pretest/Posttest

Hypertension Knowledge-Level Scale (HK-LS*) Brazilian version	CORRECT	INCORRECT	DON'T KNOW
1) High systolic (maximum) or diastolic (minimum) blood pressure indicates increased blood pressure.			
2) High diastolic (minimum) blood pressure also indicates increased blood pressure.			
3) High blood pressure is caused by aging, so it does not require treatment.			
4) If the medicine for high blood pressure can control blood pressure, there is no need to change lifestyle.			
5) If people with high blood pressure change their lifestyle, there is no need for treatment.			
6) People with high blood pressure should take their medications as they believe it is the best way.			
7) High blood pressure medicines should be taken daily.			
8) People with high blood pressure should take their medication only when they feel bad.			
9) People with high blood pressure should take their medication for the rest of their lives.			
10) For people with high blood pressure, frying is the best way to prepare food.			
11) For people with high blood pressure, cooking only in water or grilling are the best ways to prepare food.			
12) People with high blood pressure can eat food without controlling the amount of salt provided they take their medications every day.			
13) People with high blood pressure should eat fruits and vegetables often.			
14) The best type of meat for people with high blood pressure is red meat.			
15) The best type of meat for people with high blood pressure is white meat.			
16) People with high blood pressure should not smoke.			
17) People with high blood pressure can drink alcohol at will.			
18) If high blood pressure is not treated it can cause stroke.			
19) If high blood pressure is not treated it can cause a heart attack			
20) If high blood pressure is not treated, it can lead to premature death.			
21) If high blood pressure is not treated, it may cause the kidneys to stop working.			
22) If high blood pressure is not treated, it can cause eye problems.			

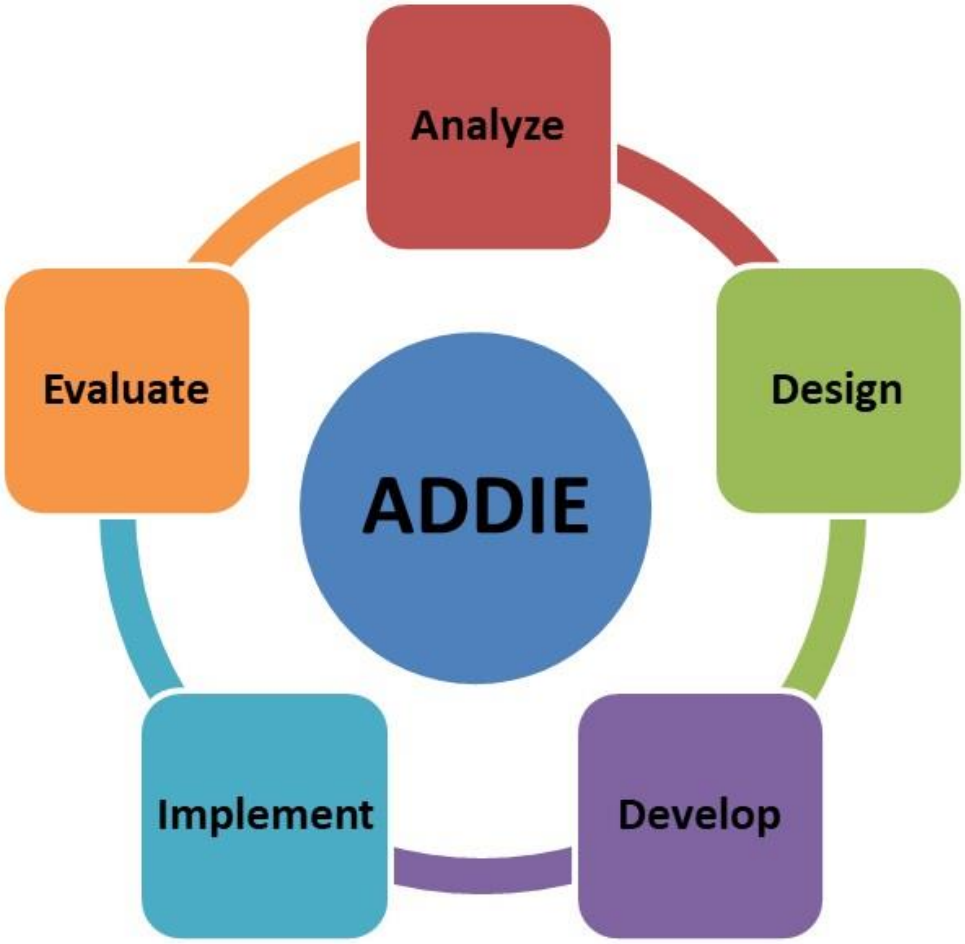
Instructions for use :
Correctly stated statements score 1 point.
Affirmations marked incorrectly score 0 points.
Affirmations indicated in the "Don't know" option score 0 points.
The maximum score, for the entire scale, is 22 points.
13 items are correct and 9 items are incorrect:
• Correct items: 1, 2, 7, 9, 11, 13, 15, 16, 18, 19, 20, 21, 22.
• Incorrect items 3, 4, 5, 6, 8, 10, 12, 14, 17.
The items are divided into 6 sub-dimensions:
• Definition: items 1 and 2;
• Medical treatment: items 6, 7, 8 and 9;
• Drug compliance: items 3, 4, 5 and 12;
• Lifestyle: items 10, 11, 13, 16 and 17;
• Diet: items 14 and 15;
• Complications: items 18, 19, 20, 21 and 22.

Figure 2. Brazilian version of the HK-LS * and usage guidelines. Curitiba, PR, Brazil, 2018

* HK-LS - Hypertension Knowledge-Level Scale

Note. From "Construct Validity and Reliability of the Brazilian Version of Hypertension Knowledge-Level Scale," by M. J. Hereibi, J. P. Arthur, M. F. Mantovani, Â. T. Mattei, W. J. M. Viante, and C. Bortolato-Major, 2021, Revista Latino-Americana de Enfermagem, 42, p. e20190429 (https://doi.org/10.1590/1983-1447.2021.20190429).

Appendix B: ADDIE Model



Note. Northern Illinois University Center for Innovative Teaching and Learning. (2020). Course design: A systematic approach. In *Instructional guide for university faculty and teaching assistants.* https://www.niu.edu/citl/resources/guides/instructional-guidee

Appendix C: Items on the High Blood Pressure Self-Care Profile Scale

1. Take part in regular physical activity (e.g.,30 minutes of walking 4Y5 times per week)?
2. Read nutrition facts label to check information on sodium content?
3. Replace traditional high-salt foods (e.g., canned soups, Oodles of Noodles) with low-salt products (e.g., homemade soups, fresh vegetables)?
4. Limit the use of high-salt condiments (e.g., ketchup)?
5. Eat less than 1 teaspoon of table salt per day (6 grams)?
6. Eat less foods that are high in saturated (e.g., red meat, butter) and trans-fat (e.g., shortening, lard)?
7. Use broil, bake or steam instead of frying when cooking?
8. Read nutrition label to check information on saturated (e.g., butter, red meat) and trans-fat (e.g., lard, shortening)?
9. Replace traditional high-fat foods (e.g., deep fried chicken) with low-fat products (e.g., baked chicken)?
10. Limit total calorie intake from fat (less than 65 grams) daily?
11. Eat 5 or more servings of fruit and vegetables daily?
12. Practice moderation in drinking alcohol daily (2 glasses or less for men; 1 glass or less for women)?
13. Practice non-smoking?
14. Check your blood pressure at home?
15. Forget to take your blood pressure medicine?
16. Forget to fill your prescriptions?
17. Keep your weight down?
18. Monitor situations that cause a high level of stress (e.g., arguments, death in the family) resulting in blood pressure elevation?
19. Engage in activities that can lower stress (e.g., deep breathing, meditation)?
20. See a doctor regularly?

Note. Adapted from "Development and Validation of the Hypertension Self-Care Profile: A Practical Tool to Measure Hypertension Self-Care," by H. R. Han, H. Lee, Y. Commodore-Mensah, and M. Kim, 2014, *Journal of Cardiovascular Nursing*, *29*(3), E11–E20 https://doi.org/10.1097/JCN.0b013e3182a3fd46

Appendix D: Likert Scale for Med Techs

LIKERT SCALE FOR MED TECHS

DNP PROJECT FOR RHONDA JACKSON

The following questions ask you about your current work environment. Circle the number that most closely indicates the extent to which the item is present in your current job:

Circle the correct numeric response to each question

Survey Scale: 1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree

#	Question							
1	My role is important in managing the resident's hypertension.		**1**	**2**	**3**	**4**	**5**	
2	This DNP education has helped me understand hypertension.		**1**	**2**	**3**	**4**	**5**	
3	I learned things that will help our residents		**1**	**2**	**3**	**4**	**5**	
4	I can use this DNP education to help others outside of this facility		**1**	**2**	**3**	**4**	**5**	
5	I would like to know more about how to manage hypertension.		**1**	**2**	**3**	**4**	**5**	

Appendix E: Module 1

MODULE 1- 45 MINUTES

1. PRE-TEST- 5 MINUTES (Brazilian version of the HK-LS)
2. VIEW 4:32 SECOND VIDEO- 5 MINUTES (HOW BLOOD PRESSURE WORKS)
3. DISCUSS VIDEO- 5 MINUTES
4. HYPERTENSION BOOKLETS AND REVIEW PAGES 1 TO 7- 15 MINUTES (Blood Pressure How do you measure up?)
5. DISCUSS QUESTIONS 1 THROUGH 10 OF THE HSP-SCP- 5 MINUTES
6. QUESTIONS- 5 MINUTES

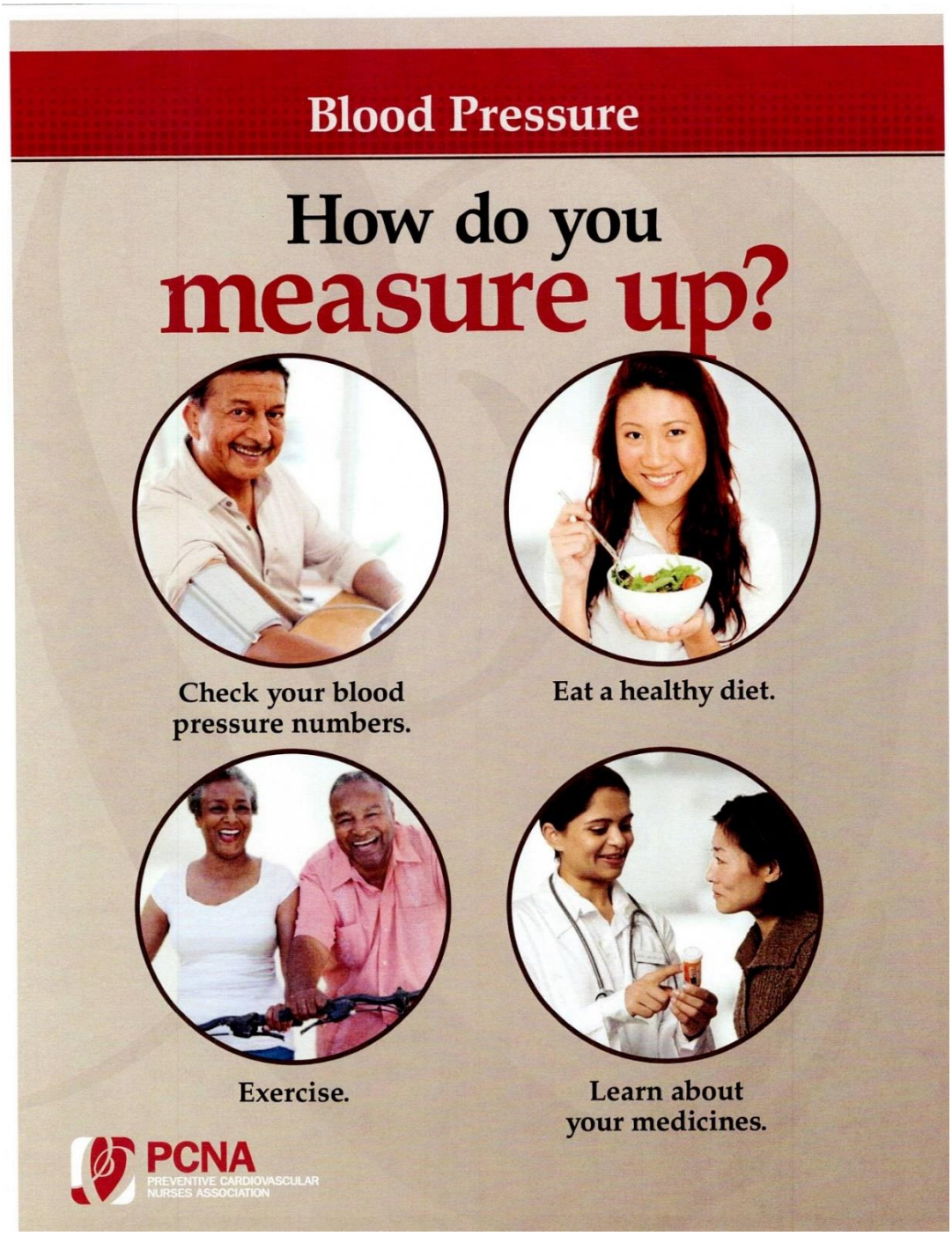
Appendix F: Module 2

MODULE 2- 37 MINUTES

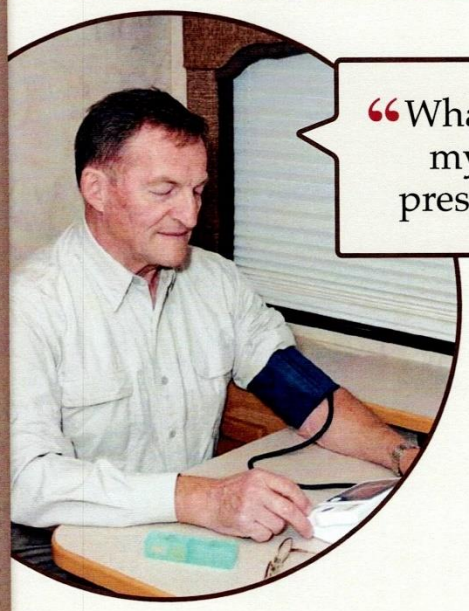
1. REVIEW INFORMATION FROM THE LAST MODULE- 5 MINUTES
2. HYPERTENSION BOOKLETS AND REVIEW PAGES 8 TO 15- 15 MINUTES (Blood Pressure How do you measure up?)
3. QUESTIONS- 5 MINUTES
4. DISCUSS QUESTIONS 1 THROUGH 10 OF THE HSP-SCP- 5 MINUTES
5. PRE-TEST- 5 MINUTES (Brazilian version of the HK-LS)
6. LIKERT SCALE TO RATE THEIR EDUCATIONAL EXPERIENCE OF THESE MODULES- 2 MINUTES

Appendix G: Hypertension Booklet

HYPERTENSION- BOOKLET- DIGITAL -ENGLISH



Know your numbers



This booklet will help you find ways to prevent and treat high blood pressure. You will learn how to check your blood pressure (BP), improve your lifestyle and understand your medicine. Take the quiz in each section first and then read the information and tips to help you reach your goals.

Quiz

Please circle Yes or No in the right column.

1	Can high blood pressure hurt your kidneys?	**Yes** OR **No**
2	Is the top number known as diastolic blood pressure?	**Yes** OR **No**
3	Is blood pressure of 140/90 normal?	**Yes** OR **No**
4	Will getting more exercise lower your blood pressure?	**Yes** OR **No**

Quiz Answers: 1.Yes, 2.No, 3.No, 4.Yes

Know your numbers

Your blood pressure reading has 2 numbers. The top number is called systolic blood pressure. It is the pressure when the heart squeezes to pump blood to the rest of the body. The second, or bottom number, is known as diastolic blood pressure. It occurs when the heart relaxes.

Less than 120/80	**Normal Blood Pressure**
Between 120 and 129 systolic (top number)	**Elevated Blood Pressure**
130 or higher systolic (top number) 80 or higher diastolic (bottom number)	**High Blood Pressure**

Your blood pressure numbers

Write your most recent blood pressure numbers here:

Blood Pressure _____ /_____ Date _____
systolic/diastolic

How does high blood pressure affect your body?

Your Brain

High blood pressure hurts your brain and increases your risk for stroke (brain attack).

Your Heart and Blood Vessels

High blood pressure hurts your heart and blood vessels and increases your risk for heart attack.

Your Kidneys

High blood pressure hurts your kidneys and increases your risk for kidney failure.

Check blood pressure at home

"How do I check my blood pressure at home?"

Checking your blood pressure at home will help your doctor or nurse know if your numbers are normal or high.

Important Note: Blood pressure numbers are often lower at home than in the clinic. The goal for blood pressure at home is less than 120 (systolic) and less than 80 (diastolic).

Quiz

Please circle Yes or No in the right column.

1	Are blood pressure numbers usually lower at home than in the clinic?	**Yes** OR **No**
2	Should you measure your arm before choosing a blood pressure monitor?	**Yes** OR **No**
3	Every time you check your blood pressure, should you take 2-3 readings?	**Yes** OR **No**
4	Should you wait 60 minutes after drinking alcohol, smoking or exercise before checking your blood pressure?	**Yes** OR **No**

Quiz Answers: 1.Yes, 2.Yes, 3.Yes, 4.No

Choose a blood pressure monitor

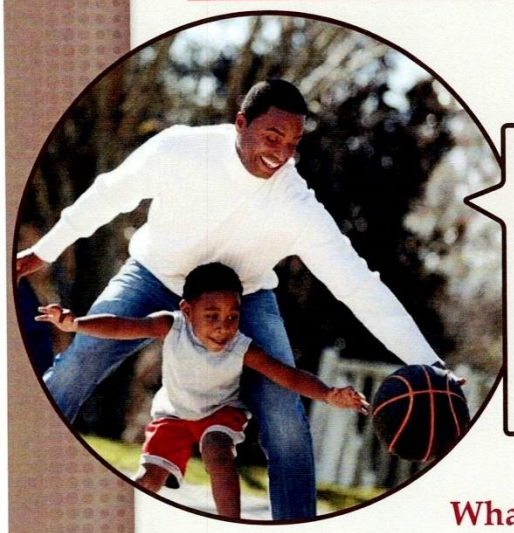
- Choose a good home blood pressure monitor by asking your nurse or doctor for advice.
- Bring your monitor to your next appointment so your nurse or doctor can check the measurement.
- Do not use a finger or wrist monitor.
- To find the cuff size that is right for you, measure the size of your upper arm with a tape measure.
  - If you do not have a tape measure, you can use a piece of string or ribbon to measure around your arm, then compare the length of the string or ribbon to a ruler to see what size cuff you need.
  - You can also print out a paper measuring tape at pcna.net/bp.
- This chart will also help you choose the correct cuff size.

Distance Around Upper Arm	8.5″-10″ (22-26 cm)	10.5″-13″ (27-34 cm)	13.5″-17″ (35-44 cm)	17.5″-20″ (45-52 cm)
Cuff Size	Small Adult	Adult	Large Adult	Adult Thigh Cuff

How to take & record blood pressure

- Wait for at least 30 minutes after drinking alcohol or caffeine, smoking or exercise before you take a reading.
- Rest for at least 5 minutes before you take a reading.
- Sit with your legs uncrossed, your back supported and your feet on the floor. Rest your arm at heart level on a table.
- Measure your blood pressure in both arms the first time you use a monitor. Use the arm with the highest reading to take future readings.
- Take your blood pressure twice a day for 7 days. Take 2-3 readings in the morning before taking your medicines, and in the evening. Each reading should be 2 minutes apart.
- Use a log to record your readings or print the numbers stored in your monitor.
- Always take your log or bring your monitor with stored readings to show your doctor or nurse.

Get more exercise



"Lowering my blood pressure can help prevent a heart attack or stroke."

What exercises are safe?

Always talk to your doctor or nurse before starting or changing your exercise routine to find out what exercises are safe for you.

Quiz

Please circle Yes or No in the right column.

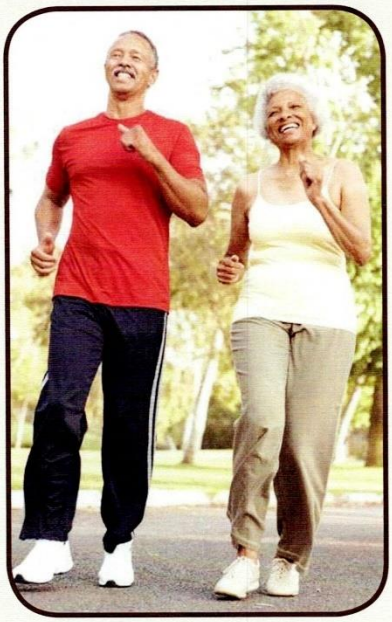
1	Will walking 30 minutes a day (all at once or in three 10-minute sessions) lower your blood pressure?	**Yes** OR **No**
2	Does exercise increase your blood sugar?	**Yes** OR **No**
3	Can exercise reduce stress and depression?	**Yes** OR **No**
4	Will exercise increase your weight?	**Yes** OR **No**
5	Can exercise help you with balance and strength?	**Yes** OR **No**

Quiz Answers: 1.Yes, 2.No, 3.Yes, 4.No, 5.Yes

Why is exercise good for you?

Exercise helps prevent heart attack and stroke by:

- Lowering your blood pressure
- Increasing your HDL, the good cholesterol
- Controlling your blood sugar
- Helping you lose weight
- Reducing stress, depression and anxiety
- Improving muscle strength, balance and fitness



Exercise tips

- Choose walking, biking, swimming and dancing. These are all good exercises for the heart and blood pressure.
- Exercise at a moderate pace for 30-60 minutes a day. You should be able to talk while you exercise.
- Warm up and stretch before exercise. Start walking or biking slowly, then increase your pace.
- Cool down! Walk or bike slowly and stretch for at least 5 minutes after you exercise.
- You can do three 10-minute exercise sessions or two 15-minute sessions per day.

Stick with your exercise program

- Set your alarm 15 minutes earlier and go out for a morning walk.
- Go for a 15-minute walk on your lunch break.
- Walk or ride bikes with family or friends after dinner.
- Join a gym or a group program.

Eat less salt

"Can eating less salt lower my blood pressure?"

You can lower your blood pressure by losing weight or eating less salt, also called sodium. As part of a healthy eating pattern, the goal is less than 2,300 mg of sodium per day—about 1 teaspoon of salt. Ideal amount is less than 1,500 mg per day, especially if you have high blood pressure, are age 50 or older, or African American.

As you eat less salt, your taste will adjust to the lower levels. It may take time to reach your goal but cutting your daily salt intake by 1/2 teaspoon can improve your blood pressure and your heart health.

Most people get most of their sodium from packaged and restaurant foods. The top 10 sources of sodium in American diets are:

- bread and rolls
- cold cuts and cured meats
- pizza
- fresh and processed poultry
- soups
- sandwiches such as hot dogs, hamburgers and submarine sandwiches
- cheese
- pasta dishes such as lasagna, spaghetti and pasta salad
- meat dishes including meatloaf, chili and stew
- snacks such as chips, pretzels, popcorn and crackers

Eat
less salt

10 easy steps for cutting sodium

1. Read nutrition labels for serving size and mg. of sodium. Choose foods with lower sodium.
2. Prepare your own food when you can. Don't salt foods before or during cooking or eating.
3. Add flavor without sodium. Use herbs and spices.
4. Choose fresh or frozen meats instead of processed meats. Check to see if salt water or saline has been added.
5. Use fresh, frozen, low sodium or no-salt-added canned vegetables.
6. Rinse canned foods such as tuna, vegetables and beans to reduce sodium.
7. Choose fat-free or low-fat milk and milk products in place of processed cheese products and spreads.
8. Choose unsalted or low-sodium nuts, seeds, chips and pretzels.
9. Choose light or reduced-sodium ketchup, soy sauce, salad dressings and seasonings.
10. At restaurants, ask for your meal to be prepared without salt and with sauces and dressings served 'on the side.' Smaller serving sizes also mean less sodium.

Nutrition Facts

2 servings per container
Serving size **1 cup (246g)**

Amount per serving
Calories **90**

	% Daily Value*
Total Fat 2g	**3%**
Saturated Fat 0.5g	**3%**
Trans Fat 0g	
Cholesterol 25mg	**8%**
Sodium 400mg	**20%**
Total Carbohydrate 11g	**4%**
Dietary Fiber 1g	**4%**
Total Sugars 12g	
Includes 10g Added Sugars	**20%**
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

The DASH diet helps you reduce sodium, increase potassium and improve your blood pressure. Visit http://bit.ly/1qvoimN, *In Brief: Your Guide to Lowering Your Blood Pressure with DASH*.

Reach a healthy weight

When you choose healthy foods, you can help lower your blood pressure.

A healthy plate = A healthy weight

Balancing Calories

- Enjoy your food, but eat less.
- Avoid oversized portions.

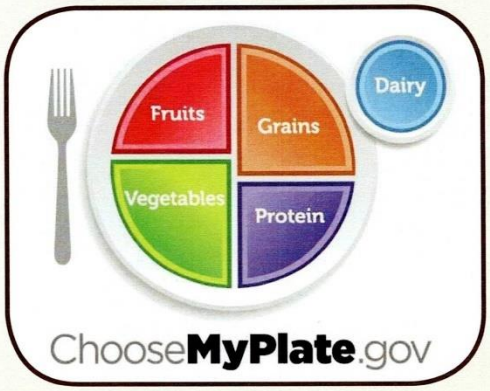
Foods to Increase

- Make half your plate fruits and vegetables.
- Make at least half your grains whole grains.
- Switch to fat-free or low-fat (1%) milk.

Foods to Limit

- Compare sodium in foods like soup, bread and frozen meals and choose the foods with the lower amounts of sodium.
- Drink water instead of sugary drinks.

How to create a healthy plate



View tips and sample meal plans at ChooseMyPlate.gov.

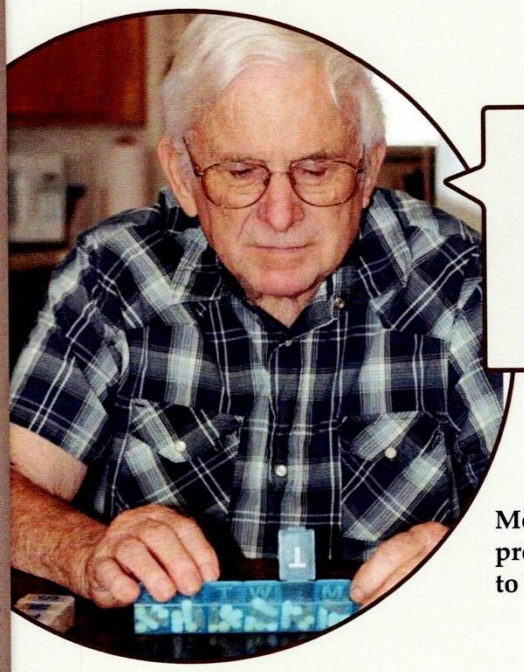
Ways to save 100 calories

1. Eat 1 cup of whole grain cereal instead of 2.
2. Add lettuce and tomato (instead of cheese) to your sandwich.
3. Use fat-free salad dressing.
4. Eat low-fat yogurt instead of toast and butter.
5. Use mustard instead of mayo on sandwiches.
6. Order thin crust instead of thick crust pizza.
7. Eat fresh fruit instead of fruit juice.
8. Use smaller bowls and plates for your food.

Tips for losing weight

- Count your calories, then eat 100 less calories a day.
- Walk 30-60 minutes most days of the week.
- Do not drink alcohol.
- Eat smaller portions. Portion size for starch and protein should not be larger than a deck of cards.
- Fill up on salads and vegetables.
- Drink a large glass of water before your meal.
- Fill up on foods such as low-sodium soup.
- Keep a food diary to keep track of what you eat.

Learn about your medicines



"How does medicine lower my blood pressure?"

Most people with high blood pressure need at least 2 medicines to lower their blood pressure.

Medicine Checklist

☑ **Check off the things you do:**

- ☐ I know the name of each medicine that I take.
- ☐ I carry a list of my medicines with me at all times.
- ☐ I know how and when to take my medicine.
- ☐ I know what side effects I need to report to my doctor or nurse when I take my medicine.
- ☐ I tell my doctor or nurse about all of the vitamins, herbs, supplements and pills I take.
- ☐ I never stop taking a medicine without calling my doctor or nurse.

How do blood pressure medicines work?

There are many medicines that lower blood pressure. They all work in different ways. Most medicines:

- Relax the arteries or
- Remove extra fluid or
- Allow your heart to beat more easily

Tips on taking your medicines

- Use a weekly pillbox to help you remember to take your medicine, even if you only take one pill.
- Take your pills at the same time each day. Use a timer or alarm on your watch or phone to remind you to take your medicine.
- Write down on your calendar when you need to refill your medicine – at least 1-2 weeks before you run out.
- When you travel, carry your medicine list, and at least 1-2 days of extra medicine.
- Keep taking your medicines even if your blood pressure is at your goal.

Things to talk about with your doctor or nurse

- Ways to make your medicine schedule easier.
- A generic blood pressure medicine to help lower cost.
- If you don't feel well after taking a medicine, call your doctor or nurse. Don't just stop taking the medicine.

Make a plan

"We can do better at taking care of our blood pressure."

Now it is time to make a plan. Small changes can make a big difference. Pick some things you plan to do.

Checklist

☑ **Check off the things you plan to do:**

- ☐ I will buy a blood pressure monitor and check my numbers at home.
- ☐ I will eat less salt and more fruits and vegetables.
- ☐ I will ask my doctor or nurse what exercises are safe for me.
- ☐ I will walk at least 30 minutes each day.
- ☐ I will carry a list of my medicines with me at all times.
- ☐ I will talk to my doctor or nurse before I stop taking any medicines.

Make a plan

Small changes make big changes in systolic blood pressure

These healthy changes can lower your blood pressure by several points.

	What to Do	How Much Your Systolic (Upper) Pressure Will Go Down
Weight	Eat less and move more to reach a healthy weight.	2-5 mm Hg for each 5-pound weight loss
Exercise	Exercise for 30 minutes most days of the week.	2-8 mm Hg
Diet	Eat fresh fruits, vegetables and low-fat foods.	3-11 mm Hg
Salt (Sodium)	Eat less sodium (salt) each day.	2-6 mm Hg
Limit Alcohol	Men: No more than 2 drinks a day. Women: No more than 1 drink a day.	3-4 mm Hg

Stopping smoking and other tobacco products is important to your health. Smoking can temporarily raise your blood pressure and can damage your arteries.

"I have the power to improve my health!"

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