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Implementation of a Standardized Provider Protocol for Hypertension Education

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GW Nursing

DOCTOR OF NURSING PRACTICE PROGRAM

A DNP PROJECT

TITLE: Implementation of a Standardized Provider Protocol for Hypertension Education

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Abstract

Background: Hypertension (HTN) is a significant risk factor for life-threatening occurrences. Although ample evidence supports the use of multiple forms of patient education to manage hypertension and reduce complications effectively, many clinicians continue to underutilize multifaceted educational approaches.

Aim/Objectives: This quality improvement project highlights the importance of a comprehensive, evidence-based, and easily accessible standardized protocol to support clinicians. The goal was to deliver crucial information to patients, promote self-care, and improve health outcomes. Evaluating the score of the HELMs and the healthcare provider survey was pivotal in measuring knowledge enhancement.

Method: Pre- and post-tests were utilized to collect and analyze data using a descriptive analysis method. Quantitative data was collected using the HELMs scale and the Healthcare Provider Survey. SPSS was used to enter all the provider survey data and the HELMs scores. The statistical analysis calculated the frequency and mean to complete the responses.

Results: A paired t-test of the HELM scale pre and post-test examined the effectiveness of the standardized protocol. Knowledge rose significantly after the intervention, with a mean difference of 25.74 ($p < 0.1$) between pre-and post-test scores. Clinicians learned how to customize treatment and education to improve patient outcomes. After the intervention, the mean was 1.14 (SD = 0.44), showing improvement. The observed decrease of 0.76 in the mean score between the pre-and post-surveys ($p < 0.001$) suggests an improvement in managing hypertension. The satisfaction survey commended standardized protocol for hypertension education. Surveys concluded that the education improved clinicians' skills and knowledge.

Conclusion: Hypertension education has shown promise, allowing clinicians to give evidence-based care. Standardized protocols help physicians improve patient outcomes. This project shows that clinical practice requires structured teaching and delivery. The small sample size (n=5) prevented statistical significance despite good results. This standardized protocol needs further research and implementation to become widespread.

Introduction

Hypertension, often known as high blood pressure, is a substantial public health concern that impacts a large number of individuals worldwide. High blood pressure, as defined by the Mayo Clinic (2022), occurs when the blood continually exerts a greater force against the arterial walls, requiring the heart to exert additional effort in pumping (2022). The potential for enhancing healthcare outcomes and promoting patient well-being by implementing a consistent strategy for physicians in hypertension education is significant. Cardiovascular disease, also known as hypertension, is a prevalent and possibly life-threatening medical ailment that impacts a significant proportion of the worldwide populace. By employing a consistent and evidence-based educational strategy, healthcare practitioners can enable patients to assume responsibility for their health and comply with hypertension treatment plans. This strategy also catalyzes patients to adopt essential lifestyle modifications, ultimately enhancing blood pressure management. Adopting a uniform method improves patients' understanding and promotes confidence between healthcare professionals and patients. As a result, this decreases the likelihood of problems and enhances cardiovascular well-being. Implementing a standardized protocol for hypertension teaching is an essential resource in modern medicine, particularly in the current era of patient-centered care. This technique is crucial for fostering the growth of well-informed, involved, and physically fit persons.

Background and Significance

The inadequate management of blood pressure is a prevalent issue among individuals with hypertension, as indicated by the Centers for Disease Control and Prevention (2020). The primary aim of this project is to provide a uniform approach to educating patients about hypertension to improve their comprehension and encourage regular follow-up care, ultimately

leading to improved patient outcomes. Providing healthcare providers with sufficient information will empower them to offer patients precise, pertinent, and beneficial advice, thus facilitating the effective self-regulation of blood pressure within a domestic environment. In addition, regular follow-up visits can help healthcare practitioners identify patients who exhibit non-adherence, face difficulties with self-management, and need ongoing support for lifestyle enhancements. This project aims to assess the insufficiency of patient education and the inconsistencies of follow-up care for patients with high blood pressure. The assessment phase of the project will facilitate the determination of whether the attempt has successfully achieved its intended objectives.

Enforcing uniform procedures for hypertension education in healthcare settings has the capacity to offer numerous benefits for both patients and healthcare practitioners. Implementing standardized education can improve patient outcomes by promoting adherence to prescribed treatment regimens and lifestyle adjustments. Studies have shown that hypertensive patients who receive standardized education are more likely to understand their condition, understand the importance of taking their medication, and recognize the role of lifestyle changes, such as diet and exercise, in managing their blood pressure. The implementation of a standardized approach to hypertension education holds promise in improving patient satisfaction and fostering greater patient involvement in their treatment. To enhance patients' sense of empowerment in controlling their illness and improve their communication skills with healthcare practitioners, it is crucial to offer them consistent and comprehensive education. Increased patient engagement in the healthcare sector has the potential to yield enhanced levels of satisfaction with the entire healthcare experience. The implementation of standardized education protocols will facilitate

healthcare providers in delivering consistent and empirically-supported instruction to all patients, highlighting their crucial role in the process.

Ensuring consistent and ongoing monitoring of hypertensive individuals is an essential element in effectively managing hypertension. *Hypertension* is a persistent medical condition that necessitates continuous observation and management. Routine examinations can confirm that patients are following their treatment plan and attaining their blood pressure goals. Regular follow-up treatment is a notable benefit as it allows healthcare professionals to monitor changes in a patient's blood pressure fluctuations over a prolonged duration. Examining trends and patterns in blood pressure control might help identify areas where adjustments to treatment strategies are needed. When a patient's blood pressure consistently remains high after following medication and lifestyle changes, healthcare practitioners may need to contemplate adjusting the medication regimen or referring the patient to a specialist for further assessment.

The provision of ongoing care presents healthcare practitioners with a valuable chance to enhance hypertension education and offer support to patients in effectively managing the challenges associated with their condition. Improving patient compliance with treatment regimens and implementing lifestyle adjustments has the potential to enhance blood pressure management and yield improved health outcomes. Providing consistent follow-up care helps facilitate the identification and resolution of any challenges associated with the management of hypertension that a patient may face. Individuals facing difficulties in meeting the financial responsibilities related to their prescribed medication might seek support from healthcare providers to access options aimed at alleviating the associated costs. The timely detection and effective handling of obstacles by healthcare professionals can mitigate complications and enhance patient outcomes. Standardizing follow-up treatment is an essential component in the

management of hypertension. This technology facilitates the ongoing monitoring of blood pressure, enhances the provision of education on hypertension, provides assistance to patients, and aids in the identification and resolution of potential barriers to the treatment of hypertension, offering a promising outlook for the future.

In the management of hypertension, it is imperative to implement standardized hypertension education within healthcare settings and ensure consistent follow-up care for individuals diagnosed with hypertension. Standardized interventions have the potential to optimize blood pressure management, mitigate related problems, and improve overall health outcomes in those diagnosed with hypertension.

Needs Assessment

A comprehensive SWOT analysis was undertaken to assess the internal strengths and weaknesses of the urgent care facility alongside its external opportunities and threats. The SWOT analysis succinctly outlines the principles mentioned above and can be found in Appendix A. The fundamental advantage of this organization lies in the consistent presence of its workforce, office manager, and chief executive officer daily. The organization prioritizes teamwork, wherein all staff exhibit a dedication to providing patient care that is both safe and timely. In order to promote a patient-centered approach, the organizations offer substantial assistance to all staff members and mitigate stress proactively. In order to avoid fatigue and frequent worker turnover, the management ensures that there is consistently a sufficient number of personnel available. The proprietors and administrators have a deep understanding of the needs of their staff, which helps them effectively carry out a health promotion initiative. Healthcare professionals hold a position of great esteem and are actively encouraged to express their concerns during group sessions and individual conversations. In order to effectively

distribute information and foster active participation from the community, the urgent care clinic upholds an up-to-date website. It maintains a social media presence on Facebook and Instagram. The organization's notable attributes include its strong focus on family values and welcoming atmosphere. Each staff member demonstrates active engagement and successfully achieves all essential job requirements. Individuals are eager to provide aid whenever and wherever it may be needed. The entity is a privately owned practice that emphasizes family-centered care and ensures safe and efficient medical services to all patients.

The organization's primary constraint is in the level of proficiency exhibited by its personnel. Several nurse practitioners and physician assistants demonstrate a lack of proficiency in urgent care settings due to the recent completion of their education or their limited prior exposure to this field. Additionally, it should be noted that the training and orientation session for providers is limited to a week. Furthermore, it is customary for medical assistants to have their initial front desk training, which is followed by clinical training in cases where they are tasked with providing assistance at the front. The seldom presence of the sole medical director on-site presents challenges to obtaining guidance during critical circumstances. One notable benefit of the organization is the presence of many providers, augmenting the level of assistance rendered during emergencies. Furthermore, the organization's proximity to a hospital, situated at a distance of 2 miles, facilitates expeditious access to medical care in the event of an emergency requiring medical services. In order to ensure the supply of suitable support, the organization maintains the upkeep of a complete workforce.

The primary peril to the organization is the possibility of provider turnover. The departure of providers can be ascribed to the requirement that they attend to patients outside of regular working hours and participate in self-funded courses to improve their skills without

compensation. The absence of uniformity in the acquisition of healthcare professionals on a full-time basis might lead to negative consequences in upholding a systematic protocol for patient education within the urgent care setting, particularly regarding conditions like hypertension. This lack of consistency can pose a significant threat to improved patient outcomes. Lack of instructional uniformity can expose patients to conflicting information or unintentionally neglect crucial instructions, heightening the probability of severe repercussions. Using standardized protocols enables the uniform dissemination of vital information, enhancing patients' understanding and adherence to the treatment-prescribed regimens. The utilization of evidence-based methodologies for the standardization of provider education has numerous benefits. By using this system, healthcare practitioners are provided with up-to-date and scientifically validated information, leading to improved patient care and safety. Implementing standardized practices is of utmost importance in enhancing the training process as it effectively reduces differences in knowledge and abilities among healthcare practitioners, hence improving the overall quality of the provision of care.

Problem Statement

The healthcare organization's primary goal was to constantly deliver the highest quality patient education to all individuals. The absence of a consistent methodology for educating healthcare professionals on hypertension therapy presented a complex challenge within the healthcare system. This inadequacy led to a rise in inconsistent and incomplete patient education practices across different clinical settings, leading to notable gaps in patient knowledge and potentially inadequate self-management. Consequently, patients may have been deprived of vital information. The lack of standardization hinders healthcare practitioners in attaining consistent and complete patient education regarding hypertension. Differences in educational approaches

among clinicians can lead to variations in the quality and efficacy of patient counseling. Variations in provider practices have consequences for patient care and potentially the training of other clinicians. This posed a challenge in guaranteeing that all practitioners were sufficiently equipped to provide evidence-based hypertension education. Establishing a uniform approach for clinicians to deliver hypertension education was crucial. This initiative aimed to tackle educational inequalities among clinicians, improve the delivery of care, improve healthcare provider training, and potentially decrease the occurrence of uncontrolled hypertension and its related burdens.

Practice Question

P: For clinicians working in healthcare

I: would the implementation of a standardized protocol for hypertension education

C: Compared to conventional education

O: Lead to an enhanced understanding of hypertension education

T: within 2 month period

In healthcare providers, does the implementation of a standardized protocol for hypertension education lead to an enhanced understanding of hypertension compared to conventional education, within a 2- month period.

Aims and Objectives

Aim #1

- Develop an evidence-based protocol for providers to use to educate patients to monitor manage their blood pressure.

Objective

- Conduct a pre-assessment of providers regarding current patient education methods and follow-up care for patients with abnormal blood pressure readings, in accordance with JNC 9
- Develop a protocol based on guidelines such as The Hypertension Evaluation of Lifestyle and Management (HELM), Hill-Bone Compliance to High Blood Pressure Therapy Scale, and The Blood Pressure Awareness and Insight Scale (BASIS) for providers.

Aim #2

- Provide educational intervention in accordance with the standards outlined for full-time Nurse Practitioners and Physician Assistants, incorporating information and guidelines provided by The American Heart Association for patient education on blood pressure.

Objective

- Develop and implement educational sessions for providers related to the new protocol for providers and evidence-based tools.

Aim #3

- Conduct a post assessment of the utilization of an Evidence-based Protocol by providers.

Objective

- Develop and administer a post test of the educational session on knowledge of hypertension management and standardized protocol
- Develop and administer a questionnaire on the usability of the protocol by the providers.

Review of Literature

A literature review was conducted to determine if the existing data supports and integrates the evidence in identifying the effects of multimedia methods of hypertension education and follow-up care in addressing the evidence-based practice question. The review

was guided by the John Hopkins Nursing Evidence-Based Practice (JHNEPB) model, a widely recognized framework for evidence-based practice in healthcare. The model, as outlined by Dang and Dearholt (2018), provides a systematic approach to appraising and synthesizing evidence. A total of ten articles were appraised using this model. The articles were all reviewed for both evidence level and quality: two articles were a level I, with one being deemed high quality and one low quality, six studies were a level II and considered to have good to high quality while the remaining two were a level III and level V and was considered to possess good to high quality within the evidence level. The articles' methodology included one cohort study, one non-experimental quality improvement intervention design, three Quasi-experimental designs, two systematic reviews, two randomized control trials, and one non-research study.

While the ten research methodologies varied, the majority of the studies identified the value of utilizing specific multimedia methods, such as interactive videos, mobile applications, and online platforms, for hypertension education and follow-up care. These methods were found to be effective in improving patient knowledge in addition to assisting in better control of blood pressure (Brunstrom et al., 2020; Eck et al., 2021; Edward et al., 2022; Go et al., 2014; Kappes et al., 2023; Londono et al., 2023; Rournie et al., 2006; Treciokiene et al., 2021; Zabler et al., 2018). Furthermore, the data reviewed did exhibit some similarities within the limitations of the studies, which included but were not limited to incomplete data collection post-intervention, inappropriate analysis of participants' comorbidities, limitation of the population to just adults, and improper exploration of hypertension management pre-intervention.

Healthcare providers must understand the importance of clinical practice guidelines when treating patients with high blood pressure. In doing so, Go et al. (2014) presented their readers with evidence-based algorithms to further assist in achieving this goal. According to Go

et al. (2014), further engaging individuals in the hypertension control process, motivating more proactive management through shared accountability, and incentives for blood pressure treatment and control are essential (2014). Additionally, the study conducted by Tan et al. (2019) did not pursue patients with hypertension; however, the authors aimed to identify the impact of implementing a standardized protocol. Tan et al. (2019) findings suggest significant improvements in managing prolonged neonatal jaundice with the implementation of a new standardized protocol, which included but was not limited to the appropriate skill set in patient and family history taking and physical examinations (8).

All the trials evaluating the efficacy of using multimedia education for hypertensive patients resulted in effective blood pressure control in addition to increased patient knowledge. Rournie et al. (2006) instituted that a comprehensive healthcare delivery system aimed at continually improving blood pressure control can improve the health of millions of people in the United States. The findings of the study suggest a 17.5% absolute increase in the number of people who reach blood pressure goals when quality improvement strategies include patient education compared with provider interventions alone (Rournie et al., 2006). In addition, the two systematic reviews conducted by Treciokiene et al. (2021) and Kappes et al. (2023) conclude that the studies that were included within the review all collectively supported the nurse-led telehealth interventions and interventions on lifestyle modifications of hypertensive patients performed by healthcare professionals were effective in decreasing patients' blood pressure by almost 5 mmHg of systolic blood pressure and increasing blood pressure control. Furthermore, telemedicine has been considered to possibly further assist in building and maintaining an enduring and long-term relationship between patients and their healthcare providers, empowering hypertensive patients, influencing their attitudes and behaviors, and promoting self-

management (Go et al., 2014). Successfully establishing the patient and provider relationship can further assist in building trust among both parties, which can aid in successfully implementing a multifactorial intervention of patient education and follow-up care. These findings suggest that healthcare providers can significantly improve patient outcomes by incorporating multimedia methods into their hypertension education and follow-up care practices.

Londono et al. (2023) conducted a quasi-experimental controlled before-and-after study, which focused on reducing the hypertension control gap by targeting primary care practitioners and hypertensive patients under their care. After the study, Londono et al. (2023) concluded that adherence to anti-hypertensive pharmacological treatment in both intervention arms improved markedly when comparing the baseline and end-line surveys. In addition, the average patients' systolic and diastolic blood pressure decreased; the odds ratio of having controlled hypertension was twice higher in the study's intervention arms than in the usual care arm (Londono et al., 2023). Following Londono et al. (2023) findings, Brunstrom et al. (2020) assessed the association of education and feedback to primary care physicians with population-level systolic blood pressure and hypertension control rates. The findings suggested that the systolic blood pressure levels and hypertension control rates may improve with educational approaches directed at physicians and other healthcare workers and implementing similar strategies when reinforcing clinical practice guidelines for hypertension management (Brunstom et al., 2020).

High blood pressure is more common in non-Hispanic Black adults (54%) than in non-Hispanic white adults (46%)(CDC, 2018). Eck et al. (2021) and Zabler et al. (2018) further investigated the effects of patient education on African American men in better managing their blood pressure. According to Eck et al. (2021), providing group classes focusing on four rotating topics: 1) defining hypertension, 2) the effects of hypertension, 3) how to eat for better heart

health and lower blood pressure, and 4) an "ask the experts" session resulted in a reduction in systolic and diastolic blood pressure. Establishing a multifactual form of patient education and follow-up care for hypertension requires the appropriate participants for the study. Unfortunately, Zabler et al. (2018) selection of participants when attempting to identify the effects of interventions for hypertensive patients did not include patients with uncontrolled hypertension. The study suggested a slight change resulting from the participants, on average, having controlled hypertension in the prehypertension range, which may have limited the change in the measurements over time.

Most of the evidence presented promotes multifactorial patient education and follow-up care in patients with hypertension. Multifactorial education and follow-up care offer physicians the chance to educate patients more effectively while strengthening their capacity to appropriately regulate their blood pressure by utilizing data already collected during routine patient education and follow-up care (Brunström et al., 2020; Eck et al., 2021; Edward et al., 2022; Kappes et al., 2023; Londono et al., 2023; Rournie et al., 2006; Tan et al., 2019; Treciokiene et al., 2021; Zabler et al., 2018). Appendix B illustrates a complete synthesis of the evidence-based literature.

EBP Translation Model

Education is a valuable tool for empowering patients and is vital in improving quality, as it has been positively associated with better health outcomes (Fereidouni et al., 2019). The theoretical framework known as the Health Belief Model (HBM) is extensively employed in health education research. Its primary focus lies in preventing diseases and adopting behaviors aimed at reducing the likelihood of illness and disease transmission (Shabibi et al., 2017). Shabibi et al. (2017) have demonstrated the efficacy of a precise model in establishing the

association between health beliefs and behaviors. According to Jones et al. (2014), the Health Belief Model (HBM) suggests that messages are most effective in promoting behavior change when they effectively address perceived barriers, advantages, self-efficacy, and dangers. The quasi-experimental study by Shabibi et al. (2017) employed the Health Belief Model (HBM) as the theoretical framework. Shabibi et al. (2017) observed a notable augmentation in self-care behaviors after implementing health education utilizing the Health Belief Model.

The Health Belief Model is being evaluated for its potential use in creating a uniform procedure for hypertension education, as detailed in Appendix F. Azadi et al. (2021) have observed that the Health Belief Model (HBM) is a widely employed educational framework that is applied to prevent chronic diseases and promote health (2021). This model is beneficial for constructing educational interventions and encouraging preventative behaviors (Azadi et al., 2021). The concept suggests that an individual's tendency and motivation to adopt healthy behaviors depend on three specific categories: personal perspective, moderating actions, and the likelihood of carrying out said behavior (Azadi et al., 2021). Hence, the efficacy of educational programs is intricately connected to their efficiency, which is predominantly influenced by the appropriate exploitation of relevant concepts and frameworks in the creation of health education. This approach will be incorporated into developing a standardized protocol for hypertension education, which was implemented as a component of this project.

The DNP student utilized a logic model to facilitate the conceptualization, execution, and assessment of the evidence-based DNP project. Baxter et al. (2014) define a logic model as a succinct visual depiction that delineates an intervention and its postulated associations with anticipated outcomes (2014). The primary objective of developing a logic model is to produce a concise theoretical framework that clarifies the mechanisms underlying a complex intervention

(2014). According to the source (2014), logic models provide insights into the theoretical underpinnings of the causal connections between treatments and results. The process includes identifying the underlying assumptions underpinning the relationships between treatments, the desired short and long-term results, and broader effects, as highlighted by Baxter et al. (2014). Baxter et al. (2014) propose that the application of logic models presents various benefits, including the ability to identify multiple perspectives or hypotheses concerning the operation of an intervention, elucidate the causal connection between interventions and outcomes, provide a concise summary of the fundamental elements of an intervention, and formulate hypotheses that can be verified. The logic model's design is anticipated to impact the implementation, assessment, and distribution of this Doctor of Nursing Practice (DNP) project.

Methods

Setting

The project was conducted at an urgent care facility in the mid-Atlantic region. The primary target demographic of the urgent care facility consists of a diverse patient population, encompassing individuals aged forty years and above, including individuals aged ninety years and older. A significant segment of the patient demographic comprises either retired or involved in agricultural pursuits on their property. Moreover, some individuals are engaged in sedentary professions such as long-haul truck driving, while others are stay-at-home mothers. Furthermore, a considerable proportion of individuals commute to their places of employment. The observed demographic diversity reflects the clinic's commitment to providing healthcare services to a varied population, underscoring the importance of your work. The facility is a six-room urgent care center, indicating its capacity to accommodate many patients while emphasizing prompt and effective healthcare delivery.

The primary objective of this initiative was to improve the standard of care through standardized strategies for hypertension education and subsequent care planning. The study utilized a pre-posttest, within-subject design to evaluate the effectiveness of the intervention. The intervention, facilitated by the project developer, was a provider training course focused on hypertension education. The Doctor of Nursing Practice (DNP) student initiated the process by requesting healthcare practitioners to participate in a pre-test using the HELM scale questionnaire. This pre-test aimed to evaluate the participants' existing knowledge before engaging in a 45-minute in-person educational workshop that specifically addressed hypertension education and treatment. The teaching session, following the established principles of the American Heart Association (AHA, 2017), was a key component of the intervention. The post-test outcome evaluated the efficacy and efficiency of the 45-minute instructional session. Printouts on hypertension were given to nurse practitioners and physician assistants for their reference outside the clinic. These printouts, covering various subjects such as hypertension, healthy lifestyle choices, exercise, food, and instructions for self-monitoring blood pressure using an electronic blood pressure cuff, were obtained from the official website of the American Heart Association (AHA).

Moreover, apart from assessing the extent of knowledge, the healthcare providers involved in the project were given a platform to share their valuable feedback. This feedback was crucial in quantifying their satisfaction and understanding the impact of the training sessions on their comprehension of hypertension and its management. Furthermore, the objective of the survey was to evaluate participants' perspectives regarding the significance of patient education regarding hypertension and the imperative nature of subsequent healthcare.

Population

The project employed a standardized protocol for hypertension education, targeting a specific group of nurse practitioners (n=3) and physician assistants (n=2) working in urgent care settings. These healthcare professionals are responsible for caring for urgent and primary care patients. To establish a standardized protocol for hypertension education, the initiative may find success with the implementation of a convenient sample technique involving clinicians. During the initial phase, a specific cohort of clinicians was identified who had previously exhibited a high level of passion for the project.

Participant Recruitment

The team consisted of three nurse practitioners and two physician assistants who met the inclusion criteria for project participation. Multiple presentations of the program were conducted to recruit six providers. Furthermore, the office manager periodically disseminated information during staff meetings and bi-monthly provider meetings. During the recruitment phase, the medical director sent emails to all acceptable providers, explaining the initiative's goal and urging nurse practitioners and physician assistants to participate in the project.

Ethical Consideration/Risks and Harms

The DNP student successfully obtained accreditation from the Collaborative Institutional Training Initiative (CITI), showcasing their understanding of the ethical considerations and up-to-date protocols involved in conducting a research study involving human participants (Hicks, 2020). The outcomes of this project ensured the adherence to ethical principles, including beneficence, non-maleficence, and fairness. Ethical considerations encompassed the crucial need to uphold the rights of human subjects, including the providers involved in the project, and ensure their protection against any potential hazards.

To uphold the anonymity of the participants, the Pre-test that utilized the HELM Scale, the Post-test, and the clinician satisfaction survey did not include any participant names or other identifiable information about the participants. To ensure confidentiality, the participants securely enclosed the pre-and post-tests and the physician satisfaction survey into an envelope. By employing numerical identifiers, the maintenance of anonymity was guaranteed. To ensure confidentiality and the privacy of all participants, a numerical identity was allocated to each set of forms, precisely one, two, three, four, five, and six. The project developer arranged all six sets, each consisting of a pre-test, a post-test, and a survey designed to assess the level of satisfaction among clinicians. The reporting solely comprised compiled data.

The implementation of the standardized provider protocol for hypertension education did not result in any psychological or emotional suffering towards any of the parties involved. The participants in the study did not receive any compensation or incur any expenses. Participants were provided with the contact information of the DNP student in order to expedite the settlement of any issues or problems. The research included surveys as a means of gathering data from the participants. The data that was gathered underwent a process of verification in order to determine its accuracy. The data was subsequently stored and analyzed using Excel and SPSS software tools.

Costs and Compensation

No funds were allocated for the development of this project, which involved minimal to no cost. Formulating the didactic program through a comprehensive analysis of the pertinent literature did not involve any cost. The organization maintained a designated space for the provision of consultancy services. Due to the indispensable nature of blood pressure cuffs in routine patient care, the necessary equipment for patient education did not result in any

supplementary costs. The participants were provided with questionnaires, instructional materials on hypertension, and pre-posttest forms without any charge.

The DNP student arranged the clinician educational session inside regular business hours. Clinical supervision was offered by the DNP student to the participants as part of her responsibilities, both during and outside standard working hours. The participants demonstrated a thorough protocol implementation during the specified work hours, receiving compensation at their regular hourly rate.

Project Intervention

Didactic Patient Education Provided by Clinician:

Disseminating knowledge to healthcare professionals regarding evidence-based hypertension protocols to establish a standardized provider protocol is an essential and methodical stage. The project began by assessing the current understanding and approaches of healthcare professionals to treating and managing hypertension. It was determined through this assessment that providers might benefit from additional training and assistance in certain areas. The project developer meticulously crafted tailored instructional materials and tools that integrated the latest evidence-based guidelines and optimal strategies for hypertension management. The resources were easily accessible and designed to be user-friendly for clinicians, facilitating their successful incorporation of the standardized protocol into their encounters with patients. Clinicians actively engaged in interactive educational sessions to interact with instructional materials, pose inquiries, and effectively address any ambiguities that arose. In order to guarantee the successful execution of the standardized procedure, regular check-ins and deliberations were developed to tackle the persistent difficulties encountered by practitioners. Evaluations and assessments were conducted to quantify the influence of the

education the clinicians received. By implementing these modifications and enhancements, the educational process was able to attain the objectives of the project effectively.

Teach-Back Method:

Following the provision of instruction to providers regarding the protocol, the project developer implemented a teach-back strategy for educational purposes. The hypertension instruction session lasted for an estimated duration of fifteen minutes. Within the domain of clinician education, the teach-back method was employed. This approach involved prompting healthcare providers to articulate the standardized hypertension education protocol in their own words while demonstrating and elucidating their approach to educating patients about hypertension. This approach enabled providers to assess their comprehension, the precision of the protocol, and the accuracy of their own information (Mohammadi et al., 2021). Utilizing this interactive methodology validated their understanding and strengthened their capacity to proficiently communicate this crucial information to patients, eventually enhancing the caliber of patient education within the project.

Simulation Education:

Simulation education was essential in training healthcare providers, particularly in implementing a standardized procedure for teaching hypertension within this project. This intervention produced genuine patient situations that accurately simulated the real-world difficulties encountered in the treatment of hypertension. Healthcare professionals were allowed to participate in these simulations, thereby actively refining their abilities to execute the standardized protocol within a controlled environment. Physicians were allowed to reflect on their performance and receive constructive assistance from the project author during a post-simulation evaluation and debriefing session. Utilizing an iterative strategy enhanced their skills

and ensured their preparedness to educate patients effectively. Yamazaki et al. (2018) have demonstrated that implementing simulation-based education is a highly effective pedagogical strategy that improves knowledge acquisition, promotes the growth of clinical expertise, provides a safe and controlled practice environment, and nurtures the development of clinical proficiencies.

Outcomes Measured

Hypertension Knowledge: Understanding hypertension is crucial in chronic care, requiring reliable assessment techniques to evaluate physicians' knowledge of the disease and their capacity to assist patients in self-care. Schapira et al. (2012) described that the HELM scale was developed as a component of a community-based study aimed at enhancing hypertension self-care. This scale has been recognized as a reliable instrument for assessing individuals' levels of knowledge, which is essential for actively participating in managing hypertension. Schapira et al. (2012) conducted a study to evaluate the validity of the HELM scale by comparing performance across multiple parameters, such as education, health numeracy, patient activation, and hypertension control. Their study findings confirmed the effectiveness of the HELM scale. The scale in question offers a thorough assessment framework that spans various topic categories, including general knowledge, lifestyle and medication management, and monitoring procedures. Assessments conducted before and after the implementation of HELM among clinicians serve to assist in evaluating their original and enhanced levels of knowledge after adopting standardized provider guidelines.

Furthermore, creating a customized healthcare provider survey enables a comprehensive assessment of clinicians' comprehension regarding the management of hypertension, risk factors, lifestyle modifications, and patient education before and after the implementation of the protocol.

This survey includes questions designed to assess physicians' understanding of hypertension management concepts and get feedback on their participation in educational sessions and dedication to adhering to the standardized protocol. The clinician-specific satisfaction survey allows for self-assessment of their comprehension of hypertension care after the intervention, evaluating reported enhancements in knowledge and the sufficiency of instructional resources. A complete evaluation can be conducted to measure the impact of standardized provider protocols on clinicians' understanding of hypertension by using both assessments and feedback systems. Moreover, it facilitates the identification of areas that require continuous improvement in healthcare delivery, aiming to achieve optimal outcomes in the management of hypertension.

Continuation of Care: Actively educating clinicians about the importance of ongoing therapy after implementing a standardized hypertension education strategy is crucial for ensuring patients' long-term health. The acknowledgment of hypertension therapy as an ongoing procedure highlights the necessity for sustained focus and subsequent evaluation, emphasizing frequent patient follow-up care and surveillance. The provision of knowledge to physicians regarding potential obstacles patients face in sustaining treatment adherence over an extended period of time enables them to provide tailored assistance in overcoming barriers to managing hypertension. In addition, disseminating knowledge to healthcare practitioners regarding the chronic nature of hypertension and its long-term health consequences improves the effectiveness of patient communication, highlighting the significance of lasting lifestyle changes and medication adherence. These findings have implications for individual patients and community health outcomes since they can reduce complications associated with hypertension and enhance cardiovascular well-being. Hypertension education delivery efficacy and the ability to engage patients in self-management efforts were evaluated using HELMs, administered both before and

after the protocol's adoption. These HELMs assessed many elements of clinical performance. Likewise, a customized survey to healthcare professionals assessed their experiences with implementing protocols, challenges faced, and opportunities for improvement, guaranteeing that the survey met the needs and expectations of the providers. Utilizing a clinician satisfaction survey enables a streamlined evaluation of perceptions about the standardized provider protocol, thereby revealing possible areas for enhancement and assuring congruence with the obligations of healthcare providers.

Project Timeline

- **Phase I (April, 2023):** The proposal was submitted to the GWU for assessment and approval
- **Phase II (April through May, 2023):** The development of the didactic component of the program, together with the creation of a comprehensive list of competences for the teach-back approach, has been successfully concluded. Throughout the duration of the project's implementation, it was incumbent upon the Doctor of Nursing Practice (DNP) student to obtain authorization for the utilization of the Hypertension, Evaluation, Lifestyle, and Management Survey. The doctor of nursing practice (DNP) student was tasked with choosing the dates for a quality improvement project.
- **Phase III (May through June, 2023):** Providers were enlisted for the project through email and face-to-face meetings with staff, with the assistance and direction of the office manager and medical director.
- **Phase IV (August through November, 2023):** Physician assistants and nurse practitioners were provided with educational instruction. Every participant engaged in the didactic/teach-back technique during the one-day session of the hypertension course.

Furthermore, before and after the 1-day session, every participant had to complete a pre/post survey, specifically the Healthcare Provider Survey, for the purpose to assess their performance. Furthermore, prior to the Hypertension Education course, each provider underwent the completion of the Hypertension, Evaluation, Lifestyle, and Management (HELM) scale questionnaire.

- **Phase V (December, 2023 through March, 2024):** The results of the Doctor of Nursing Practice (DNP) project was evaluated.
- **Phase VI** (March through May, 2024): The final DNP report was executed, and the project team was informed of the findings.

The actions indicated above are outlined in Appendix H, which represents the Project Timeline in the form of a GANTT Chart.

Instruments and Tools

Clinicians were given a pre-test and post-test to assess their comprehension of hypertension management and instruction. The DNP project student created the self-assessment surveys and later distributed them to all providers who participated in the project. The survey questionnaires were created based on scholarly literature on evidence-based practices. The survey questionnaire evaluated the extent of knowledge on hypertension education and the importance of subsequent care and management. The DNP student developed the questions in the survey questionnaire. Seventeen inquiries evaluated the provider's subjective understanding of hypertension education and subsequent care. The questionnaire responses were collected on a scale of 1 to 3, with levels of 1) yes, 2) somewhat, and 3) no. Appendix E illustrates the pre-post-test administered by the healthcare professional.

Patient education for hypertension (HTN) has been demonstrated as a practical approach for reducing blood pressure and addressing this avoidable yet incapacitating medical condition. This project used the HELM scale, consisting of 14 items, as both the pre and post-test. Its purpose was to assess clinicians' understanding of hypertension. Schapira et al., 2012 developed this scale as part of a community-based study to enhance the maintenance and self-management of high blood pressure in patients. The items acquired from the baseline survey were used to test knowledge in three specific areas: goal-setting and monitoring, lifestyle and medication management, and general HTN knowledge and treatment targets. Schapira et al. (2012) focused on these topics in the baseline survey. According to Jordan et al. (2013), the instrument has a high level of internal consistency across all domains, as indicated by a Cronbach alpha value greater than 0.82. The primary objective of the HELM knowledge scale is to assess individuals' understanding of hypertension within the framework of the chronic care model. This scale has been shown to possess content and construct validity, as Schapira et al. (2012) indicated.

Furthermore, healthcare professionals can employ the scale as a means of evaluating their comprehension of hypertension and the importance of educating individuals diagnosed with hypertension regarding the active engagement necessary for their blood pressure management within the home environment. Consequently, the HELM scale was employed as the pre and post-test instrument to assess clinicians' understanding of patient self-management of hypertension. Appendix C illustrates the Hypertension, Evaluation, Lifestyle, and Management Scale.

The survey findings measuring clinician satisfaction were utilized to get feedback from clinicians regarding their experiences with standardized education about hypertension. The clinician satisfaction survey results facilitated the identification of areas that require improvement, such as the caliber of the education delivered or the efficacy of the teach-back

technique. The collection of clinician responses regarding their experiences with the standardized educational session facilitated more healthcare providers in gaining a deeper comprehension of how to proficiently educate patients on managing hypertension, resulting in enhanced patient outcomes. Soliciting feedback from medical practitioners has effectively involved them in providing care and empowered them to maintain an active participation in managing their patients' health. Through the provision of patient-specific education, healthcare providers successfully enhanced patient outcomes, including the management of blood pressure. Conducting questionnaires to assess clinician satisfaction yielded significant insights into their experiences with hypertension education programs and aided in directing continuous quality improvement endeavors. Appendix D contains the clinician satisfaction survey.

Evaluation Plan

The primary objective of this project was to identify appropriate evaluation methodologies, procedures, and instruments that would be routinely utilized to assess the effectiveness, efficiency, and influence of an educational intervention designed to improve the understanding of hypertension among healthcare providers. The DNP student's initiative established several objectives, encompass augmenting the participants' understanding of hypertension, assisting patients in altering lifestyle choices, and improving blood pressure regulation. The predicted permanent impacts of this effort were expected to increase public awareness of hypertension management approaches and healthcare practitioners, hence catalyzing the implementation of health promotion initiatives in urgent care settings. These software applications assisted healthcare professionals in effectively treating hypertension and other chronic conditions by targeting and resolving the detrimental lifestyle behaviors exhibited by patients. The intermediate impact refers to the attainment of enhanced blood pressure

management. On the contrary, the immediate impact entailed the augmentation of knowledge and consciousness about the risk factors associated with this chronic ailment, alongside implementing strategies that facilitated better management.

The logic model proved to be a valuable and economically efficient framework for implementation and evaluation. The presented logic model illustrated a conceptual framework that outlined the outcomes over a short-, medium-, and long-term period. Hence, the proposal was deemed appropriate for this particular project due to its inclusion of objectives spanning different timeframes, specifically short, medium, and long-term, pertaining to the development of a standardized protocol for the dissemination of clinicians' knowledge on hypertension.

To ensure good medium-term outcomes, it was essential to have a comprehensive understanding of the obstacles encountered by healthcare providers when educating patients on managing and preventing hypertension. The primary objective of this method was to enhance clinicians' self-confidence in delivering patient education on the management and prevention of hypertension to attain favorable long-term results. The project's sustainability was confirmed by utilizing a logic model and efficiently conveying the results to all relevant stakeholders.

Data Analysis, Maintenance & Security

Between October 2023 and November-December 2023, healthcare professionals were actively involved in a comprehensive project centered on hypertension education and management. Upon consenting to participate, extensive data collection took place, which included providing information about hypertension education, initiating medication, conducting follow-up consultations, and using teach-back procedures. This process resulted in creating datasets for both the pre and post-education periods. The HELMs scale questionnaire and the Healthcare Provider survey were used meticulously to gather the data for these datasets. The

HELM scale demonstrates a notable internal consistency across all domains, as evidenced by a Cronbach alpha value surpassing 0.82, as reported by Jordan et al. (2013). Preceding the dissemination of educational resources on hypertension, all healthcare professionals who participated in the project completed an initial survey and questionnaire designed to assess their level of knowledge and comprehension regarding hypertension education and subsequent care. These surveys and questionnaires were distributed and collected promptly, enabling efficient access to the training curriculum upon its completion. In addition, within five days after the training, all providers were provided with a physical copy of a self-assessment, which allowed for continuous evaluation of their understanding and advancement.

The pre-test and post-test outcomes were analyzed using a paired t-test to generate descriptive statistics, which yielded valuable insights into the effectiveness of the intervention. Moreover, following the project's conclusion, significant feedback was systematically gathered from all participants via the implementation of the Clinician Satisfaction Survey, supervised by the Nurse Practitioner/DNP student leading the project. The primary objective of this extensive survey was to evaluate healthcare practitioners' attitudes and experiences about educational training sessions. This survey encompassed their viewpoints on different types of hypertension education and outlined their objectives for future patient education and follow-up care. The study aimed to collect data through the Clinician Satisfaction Survey to obtain valuable insights that might be used to improve hypertension education methods and enhance patient care outcomes.

The data acquired from the two survey instruments before and after the intervention were inputted into the Statistical Package for the Social Sciences (SPSS). The data was subsequently examined in SPSS and meticulously verified by the DNP student to ensure precision. No data was missed, as all data was gathered from participants on both the pre and post-intervention

days. There were very few outliers. Utilizing this software, descriptive statistics were computed to analyze the pre-test and post-test outcomes. The statistics encompassed metrics such as frequencies and averages of responses, which yielded significant information regarding the efficacy of the intervention. The DNP student evaluated any notable alterations or enhancements emerging from the intervention by comparing the pre-test and post-test data. Utilizing this analytical methodology facilitated a full assessment of the intervention's effects on the participants involved in the project.

Findings

During a two-month period, five providers underwent screening. All the collaborating providers have satisfactorily met the requirements for this DNP project. The data analysis included data from five individuals who successfully achieved the objectives.

Hypertension Knowledge (HELMs)

The effectiveness of the standardized hypertension education was assessed using the HELM scale with a pre-and post-test analysis employing a paired t-test. Before the intervention, the providers possessed an average knowledge score of 64.25 (SD = 19.58), which suggests moderate understanding. Following the educational intervention, a notable improvement in knowledge occurred, as demonstrated by providers achieving an average score of 89.99 (SD=8.15). The statistical analysis revealed a significant disparity in the mean score of 25.74 between the scores before and after the test ($p < 0.1$), suggesting a substantial increase in knowledge levels after the intervention. The results validate the effectiveness of the educational initiative in improving healthcare professionals' understanding of hypertension, highlighting the importance of focused interventions for improved patient care and outcomes.

Appendix I presents the findings of the HELM scale, illustrating the rise in scores from the initial assessment to the final evaluation through a bar graph. The graph illustrates the improvement in participants' scores following the implementation of the hypertension education intervention, as represented by the dark blue bars. Light blue shows the pre-test scores, while gray indicates the difference between the scores after the intervention. Appendix D displays the disparity in the average scores before and after the test and the standard deviation using a paired sample t-test. The statistical analysis provides evidence of the educational intervention's efficacy in improving participants' comprehension and the management of hypertension among their patients.

Healthcare Provider Survey

To evaluate the results of the healthcare provider survey before and after the intervention, the providers were given a healthcare provider pre-and post-survey. The test results are presented in Appendix L. Additionally, the test findings presented in Appendix L are accompanied by a table illustrating the average and variability of the providers' responses to each question. This table offers an extensive overview of the survey responses. The replies to the questions were represented as 1 (Yes), 2 (Somewhat), and 3 (No). The data entry method entailed assigning a value of one to pre-survey variables and a value of two to post-survey variables for subsequent analysis. The healthcare provider survey comprised a total of seventeen questions. The frequency, percentage, mean, and standard deviation were documented for each variable. A paired sample t-test was conducted to evaluate the differences between pre-survey and post-survey answers regarding change. The analysis included mean and standard deviation values and the significance level, t-value, and p-value associated with each survey.

The post-survey revealed a significant rise in the responses to most of the provider's queries compared to the pretest replies, indicating a lower overall score. In the post-survey, participants answered yes to more questions than in the pre-survey. Questions 4, 5, 8, 9, 10, and 12 explicitly asked about the participants' patient follow-up and education and showed a significant increase. During the pre-survey, most participants said they offered limited instruction or did not furnish patients with blood pressure logbooks. Before the intervention, the mean on the pre-survey was 1.90 (standard deviation = 0.92), indicating a variation in adherence to optimum behaviors. Following the educational intervention, there was a significant improvement, as indicated by a mean of 1.14 (standard deviation = 0.44) post-survey. The observed decrease of 0.76 in the mean score between the pre-and post-surveys ($p < 0.001$) suggests a significant improvement in compliance with the American Heart Association guidelines and evidence-based practices in managing hypertension. The findings underscore the effectiveness of targeted educational interventions in improving healthcare practitioners' approaches to educating and managing patients with hypertension, ultimately leading to better patient outcomes.

Clinician Satisfaction

The post-hypertension education session, taught by a DNP student, resulted in highly favorable clinician feedback in multiple areas, as indicated by the satisfaction survey. Providers consistently rated satisfaction with the educational intervention on a scale ranging from one (satisfied), two (neutral), and three (not satisfied). All five providers expressed satisfaction with the quality of education delivered (Question 1), the various modalities of instruction on hypertension (Question 2), and the duration of time dedicated by the DNP student to education (Question 3). Four providers indicated satisfaction, and one remained neutral about adherence to

standardized protocols for hypertension care (Question 4). In contrast, all providers reported satisfaction with the hypertension education they now deliver post-intervention (Question 5). In addition, providers expressed satisfaction with the teaching methods utilized (Question 6), their use of the teach-back method to communicate with patients (Question 7), and their handling of questions and concerns throughout the educational session (Question 8). In addition, most providers acknowledged contentment with the duration of hypertension teaching provided by the DNP student (Question 9) and the implementation of standardized protocols and practices for patients with hypertension (Question 10). Overall, the survey results suggest that providers found the educational sessions extremely helpful in improving knowledge of the DNP student's teaching session, as seen by their positive responses to a range of survey questions. The comprehensive scores and variances for each question can be located in Appendix K.

Adopting a standardized protocol for hypertension education has shown excellent results, offering compelling evidence of its potential to play a vital role in assisting healthcare providers in effectively managing patients with high blood pressure. By receiving continuous education and following established protocols, healthcare providers are more prepared to provide top-notch care, enhancing patient outcomes. The success of this initiative highlights the significance of structured education and standardized approaches in healthcare delivery, emphasizing the necessity for ongoing support and integration of such protocols into clinical practice. To achieve widespread adoption and sustained improvement in hypertension management, conducting further research and continuing implementation efforts is crucial. This will ultimately lead to enhanced patient care across various healthcare settings.

Project Limitations

While the project produced noteworthy results and effectively accomplished all predetermined goals, it is imperative to recognize and rectify specific deficiencies. The initial obstacle was the limited duration of four months allocated for implementation, which impeded the attainment of significant, long-term outcomes. The findings may have been compromised in accuracy and reliability due to the constrained timetable, which may have reduced the extent of intervention delivery and the comprehensiveness of data collecting. Moreover, the limited number of participants, consisting of only five providers, may have distorted the applicability of the findings, as they may not sufficiently reflect the larger group of healthcare providers.

Initiating and executing this initiative within an urgent care facility in a remote region posed notable obstacles to patient monitoring and involvement. The ability of patients to return for follow-up visits was impeded by geographical barriers, including residences located at a considerable distance from the healthcare institution and limited access to dependable transportation choices. In addition, providers encountered challenges in carrying out remote patient follow-ups due to technological constraints, such as the absence of internet connectivity for virtual consultations. Financial constraints have been identified as a significant obstacle, as certain patients cannot afford necessary resources such as blood pressure cuffs. This financial limitation hinders healthcare practitioners from effectively monitoring patients' blood pressure trends. In light of these constraints, it is imperative for forthcoming studies to comprehensively tackle these obstacles and investigate alternate approaches to enhance hypertension education and management in comparable healthcare environments.

Discussion

Within two months, the DNP project "Implementation of a Standardized Provider Protocol for Hypertension Education" successfully achieved its desired objectives. A total of five different providers participated, and each of them fulfilled the project requirements. Utilizing healthcare provider surveys and the HELM scale, the initiative assessed the efficacy of standardized hypertension education. The HELM scale questionnaire analysis demonstrated a notable enhancement in providers' understanding of hypertension after the educational intervention. In the pre-intervention period, healthcare practitioners exhibited a moderate level of comprehension, as indicated by an average score of 64.25. The average score significantly increased to 89.99 following the intervention, indicating a substantial improvement in knowledge levels ($p < 0.1$). The findings confirm the efficacy of the educational initiative in enhancing healthcare professionals' comprehension of hypertension, underscoring the significance of targeted interventions for optimized patient care.

Furthermore, the survey conducted among healthcare providers revealed a notable increase in replies after the intervention compared to the pre-intervention period, specifically regarding patient follow-up and education. There was a substantial improvement following the intervention among the participating providers adhering to optimum behaviors, demonstrating a greater alignment with the guidelines set forth by the American Heart Association and evidence-based procedures in managing hypertension. The satisfaction survey revealed that clinicians were highly satisfied with the educational intervention across multiple domains. Healthcare providers conveyed contentment with the caliber of education, instructional methods, duration of educational sessions, and adherence to standardized guidelines for managing hypertension.

The successful application of a standardized approach for hypertension education highlights its capacity to aid healthcare professionals in efficiently instructing individuals with hypertension, hence improving patient outcomes. Nevertheless, the study encountered other limitations, such as a restricted time frame, a scarcity of participants, and challenges pertaining to patient monitoring and engagement, including geographical impediments. To achieve widespread adoption and sustained improvement in hypertension management, addressing these constraints and performing further research is necessary. Prospective studies should address these challenges thoroughly and explore alternative strategies to improve hypertension education and management in comparable healthcare settings.

Implications/Recommendations for Practice and Research

The successful culmination of the Doctor of Nursing Practice (DNP) initiative titled "Implementing a Standardized Provider Protocol for Hypertension Education" is a testament to the collaborative efforts of healthcare professionals. This project, in its first phase, involved the development of a standardized procedure that provides a structured framework for healthcare practitioners to consistently deliver hypertension education. By implementing this standardized educational delivery, healthcare teams can significantly improve patient knowledge, adherence to treatment regimens, hypertension management, and patient outcomes. This standardized approach not only promotes interdisciplinary collaboration and care coordination but also enhances communication effectiveness among healthcare professionals.

Moreover, the proficient implementation of the standardized technique underscores the potential for future research in healthcare decision-making. Through comprehensive research and evaluation, this effort has demonstrated the efficacy and feasibility of employing standardized protocols for hypertension education. In subsequent periods, healthcare institutions possess the

potential to employ these outcomes to develop comparable protocols for diverse chronic ailments. This will ultimately enhance the quality and consistency of patient care in various healthcare settings. Furthermore, it is suggested that future studies should further investigate the long-term impacts of standardized protocols on the management of hypertension, patient satisfaction, and the utilization of healthcare resources, offering a promising outlook for the future of hypertension education.

Considering the implications, several suggestions emerge for both clinical application and research. Healthcare institutions should prioritize integrating standardized processes for hypertension education into practice guidelines and provider training programs from a clinical standpoint. Consistent adherence to the defined methodology in instruction delivery is ensured through ongoing education and training for healthcare providers. In addition, healthcare facilities must implement mechanisms to monitor and evaluate the implementation of standardized protocols actively. This involves integrating tools to collect patient feedback and assess adherence to protocol criteria.

Further investigation is required to assess the applicability of standardized protocols for hypertension education across different patient populations and healthcare settings to determine their potential for scalability and generalizability. Furthermore, it is crucial to carry out longitudinal studies to assess the long-lasting impacts of standardized procedures on the treatment of hypertension and the outcomes observed in patients over a prolonged duration. The Doctor of Nursing Practice (DNP) initiative has the potential to improve evidence-based practices and provide valuable contributions to the ongoing endeavors aimed at strengthening the delivery of hypertension education.

Plans for Sustainability and Future Scholarship

The long-term viability and effectiveness of a standardized provider protocol for hypertension education are contingent upon various crucial elements, as highlighted by Daskalopoulou et al. (2018), including continuous research efforts and revisions to clinical guidelines. The authors contend that including fresh evidence and future treatments necessitates continuous revisions, augmenting standardized protocols' efficacy as time progresses. In addition, it is imperative to allocate resources toward professional development and training initiatives to maintain healthcare professionals' competence in delivering hypertension education (Magid et al., 2016). A significant number of the participants at the project site exhibited insufficient knowledge regarding blood pressure control. The scenario mentioned above highlights the necessity for efficacious solutions. The project revealed that introducing a uniform educational intervention resulted in notable enhancements in healthcare personnel's comprehension of hypertension and their proficiency in adequately managing it. Implementing this project led to increased patient education about lifestyle adjustments and enhanced the quality of follow-up care. Stakeholders enthusiastically endorse the continuation of this effort.

A more comprehensive examination is necessary to evaluate the long-lasting impacts of this standardized provider protocol for hypertension education. The DNP project has successfully established the groundwork for the sustained feasibility of an urgent care facility, encompassing both inexperienced and experienced professionals. Healthcare professionals have exhibited an increased commitment to engaging in continuing medical education sessions, reflecting a heightened comprehension of hypertension management. There is also a desire to distribute training information to recently employed individuals to enhance health promotion programs and

evidence-based therapy for patients with hypertension. Conducting more inquiries would act as a catalyst for spreading information among healthcare practitioners.

Conclusion

In summary, the development and execution of a standardized provider protocol for hypertension education signify a notable progression in tackling the many obstacles linked to hypertension care. This project has effectively developed a comprehensive framework to assist healthcare practitioners in delivering consistent and evidence-based hypertension education to patients. This has been achieved through rigorous evidence synthesis, stakeholder engagement, and protocol refining. The primary objective of this project was to improve patient outcomes, encourage medication adherence, and ultimately decrease the prevalence of problems associated with hypertension by providing healthcare providers with a standardized approach. In addition, the project's dedication to addressing the varied requirements of patients and promoting a collaborative approach to managing hypertension is highlighted by integrating innovative educational methods, such as digital health technology and customized patient resources.

Moving forward, it is imperative to maintain ongoing endeavors to assess the efficacy and expandability of the standardized provider protocol in various clinical environments. Furthermore, the optimization of the impact of this protocol on hypertension treatment delivery will require continued collaboration with interdisciplinary healthcare teams, continual quality improvement initiatives, and adaptation to evolving findings. The successful completion of this DNP project represents a notable advancement in improving the quality, uniformity, and efficacy of hypertension education in clinical practice. The goal is to enhance patient outcomes, foster health equity, and advance the collective endeavors in addressing the worldwide prevalence of hypertension by equipping healthcare practitioners with essential tools and resources.

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Appendices

Appendix A

SWOT Analysis Figure

	Helpful To achieving the objective	**Harmful** To achieving the objective
Internal Origin {Attributes of the organization}	**Strengths** • Privately owned, not a part of a big corporation • Engaged, committed and hardworking staff • Cross training offered for MA's and x-ray techs • Fully reimbursed training for providers • Supportive and caring environment • Attentive and supportive office manager	**Weaknesses** • No requirements of certification for medical assistants • On-job training for staff which had led to inconsistencies • Long hours for providers • Office is never closed open 365 days a year • Lack of experienced providers: some are new graduates, never worked in urgent cares or emergency rooms, and some have never worked with children.
External Origin {Attributes of the organization}	**Opportunities** • Opportunities for providers to become certified in aesthetics, hormone replacement pellets (Biote), DOT • Travel opportunities to other locations • Engaged and family oriented within the organization • Cross training for medical assistants and x-ray techs	**Threats** • Provider turnover, due to lack of experience, and long hours or no holidays off • Private organization which restricts moving up the ladder for some office staff • X-ray tech turnover due to expectations of having to complete MA tasks

Appendix B

Evidence Table

Article #	Author, Date & Title	Type of Evidence	Population, Size, Setting	Intervention	Findings that help answer the EBP Question	Measures Used	Limitations	Evidence Level & Quality
1	Brunström, M., Ng, N., Dahlström, J., Lindholm, L. H., Lönnberg, G., Norberg, M., Nyström, L., Weinehall, L., & Carlberg, B. (2020).	Cohort Study	283,079 patients used data from primary care centers in 2 counties (Västerbotten and Södermanland) in Sweden from 2001 to 2009. Aged 18 years or older who had their blood pressure (BP) measured and recorded in either county during the intervention period.	Data was extracted from the electronic medical records to assess the effectiveness of providing hypertension education and feedback to primary care physicians in reducing the systolic blood pressure in addition to improved hypertension control rate within the population	The results of this study showed that during the intervention period the mean systolic blood pressure level decreased more in the intervention county (Vasterbotten) compared with the control county (Sodermanland). Hypertension control rates increased substantially in both counties but more so in the intervention county, with 30% higher odds for BP control in the	Hypertension control rate SBP of 140 mm Hg or higher indicated hypertension Logistic Regression Educational level as a covariate	Unable to use data on risk factors such as obesity and physical activity The calculated E-value for hypertension control rate further suggested that such an unmeasured confounder (risk factors) would need to be 54% more common in the control county and increase the likelihood of hypertension control by 54% to explain away the findings. Such a large difference	II, A

					fully adjusted model.		between counties for an unmeasured confounder seems unlikely given the observed similarities for other parameters.	
2	Eck, C. (2021).	Non-experimental quality improvement intervention design	Intervention conducted in the urban Federally QualiBed Health Center (FQHC). Priority population for the intervention was Black men with severe hypertension (systolic BP >160 mm Hg or diastolic BP >100 mm Hg). 93 participants -16 African American Men	The hypertension self-management classes among clinic patients, particularly in African American men.	The average baseline BP of multiple attenders was 153.8/94.8 mm Hg, which was reduced to an average BP of 134.7/80.8 mm Hg by the end of class participation. This change represented an average reduction of 19.1 mm Hg in systolic BP (P = .004) and 14.8 mm Hg in diastolic BP (P = .002) over the course of their participation. Of the 27 people who attended the class	The primary outcome of interest was blood pressure change among the participants who attended multiple classes. Inferential Statistics: used to determine whether any baseline differences existed between participants who attended multiple classes and those who attended only 1	Did not collect structured data on participants' actions outside of the classes. Did not analyze participants' health factors aside from hypertension. Did not collect BP measurements after patients stopped attending classes, so the analysis could not make any conclusions about the sustainability of participants' BP improvements	III, C

					multiple times, 24 achieved a reduction in systolic and/or diastolic BP.	Paired T-test was used to compare means, and 2-sample t tests were used to compare proportions Tests were conducted with Stats/SE version 16	Class was held during the workday, which likely presented a barrier to attendance for working patients. Since attendance was voluntary, the sample represented people who were ready to learn and engage around the hypertension issue: the convenience sample was not generalizable to all hypertensive patients.	
3	Edward, A., Kagaruki, G. B., Manase, F., Appel, L. J., & Matsushita, K. (2022).	Pre-Post Study	Study was conducted in five districts of Dar-es-Salaam region: Kigambone, Ilala, Temeke, Ubungo, and Kinondoni 18 randomly selected health	Provider-training through brief instructional videos, on healthcare provider knowledge over an extended follow-up period, and a screening quality index (SQI)	The results from patient exit interviews showed significant improvements in the following: time between blood pressure readings, blood pressure threshold for	Screening Quality Index (SQI), comprised of ten HT screening standards, was used to measure adherence.	Lack of a control group and the clinical behavior change due to observations (namely providers may behave differently due to observations) pose inherent	II, B

			facilities were included in the final sample. 181 patients Ages equal to or greater than 30, both male and female with hypertension 33 providers	consisting of ten hypertension screening standards was used to measure adherence to hypertension medication.	patients with complications, lifestyle/dietary counseling. The screening quality index was significantly higher following the training for all provider groups, nurses, assistant medical officers and medical officers, and assistant clinical officers and clinical officers. Lastly, After training, significantly higher adherence was evident for key aspects of managing patients with hypertension	provider knowledge competencies.	study limitations.	
4	Go, A. S., Bauman, M. A., Coleman King, S. M., Fonarow, G. C., Lawrence, W., Williams, K. A.,	Non-Research	N/A	Developing, disseminating, and implementing an effective hypertension treatment	N/A	N/A	N/A	V, A

	& Sanchez, E. (2014			algorithm is a critical part of a multipronged, systematic approach to controlling hypertension, because it facilitates clinical decision making, provides a default approach with proven benefits, and engages multiple providers in a coordinated manner.				
5	Kappes, M., Espinoza, P., Jara, V., & Hall, A. (2023).	Systematic review	Literature search was conducted on PubMed, Scopus, Cochrane Library, Web of Science, CINAHL, and ProQuest. Keywords used: Search (Nursing Interventions) AND (Telehealth)) AND (high blood pressure)	The effectiveness of nursing-led telehealth interventions in reducing blood pressure in hypertensive patients.	Nurse-led interventions delivered remotely (telehealth devices, remote video consultation, calls and email alerts) demonstrated a significant decrease in blood pressure (especially systolic blood pressure) in intervention	Blood pressure, hypertension awareness, self-efficacy, and self-control. Other related outcomes.	Number of articles included. Difficult to quantify the benefits and compare one intervention to another because the nurse-led interventions were heterogeneous, especially regarding the type of online resources used,	II, A

			Filters: Clinical Trial, Randomized Controlled Trial, from 2010 to 2021 Languages English, Spanish and Portuguese. Inclusion criteria: RCT, quasi-experimental studies, hypertensive adult patients, with or without other comorbidities like diabetes, obesity, and dyslipidemia. After applying the inclusion and exclusion criteria, 7 articles were included in the final analysis.		groups. Nurse-led interventions also effect hypertension awareness, self-efficacy, and self-control. Positive outcomes related to lowering cholesterol, improving consumption of fruits and vegetables, increased physical activity and adherence to medication were also described.		intensity of intervention and follow-up Effects of the nursing-led interventions delivered remotely might depend upon the nature of the content delivered and the online resources used. Patient's cultural and educational backgrounds, state of the disease and its complications, and baseline blood pressure level measurements may have influenced the assessment accuracy of nurse -led interventions.	

6	Londoño Agudelo, E., Battaglioli, T., Díaz Piñera, A., Rodríguez Salvá, A., Smekens, T., Achiong Estupiñán, F., Carbonell García, I., & Van der Stuyft, P. (2023).	Quasi-experimental controlled before-after study.	The Cuban primary health care system consists of Family Doctor and Nurse (FD&N) practices and policlinics. Health areas Julio Antonio Echeverria and Moncada in the municipality of Cardenas, and in the Grimau and Finlay, health areas in Santiago municipality Total participants: 2800 with hypertension 25 patients were selected by simple random sampling from the hypertensive register in each of the practices. 18 yrs. or older, with a confirmed	A controlled before and after study was conducted in family practices in Cardenas and Santiago Cuba staffing both a doctor and nurse using baseline and endline surveys to assess the effectiveness of the integrated care through an accessible network of family practices in assisting in strengthening skills in correctly taking blood pressure and anthropometric measurements and accurately recording in addition to improved hypertensive patient understanding of their condition and to foster self-reliance.	The controlled before-after study in 122 FD&N practices in two Cuban municipalities found that an intervention targeting primary health care providers resulted in a substantially increased proportion of patients with controlled hypertension. In both intervention arms of the study, the adherence to anti-hypertensive pharmacological treatment improved markedly from baseline to endline, and the average patients' systolic and diastolic BP decreased. After the intervention,	Medication adherence measured by a four-item medication adherence questionnaire controlled hypertension as a mean systolic and diastolic BP lower than 140 and 90 mmHg Baseline survey Endline Survey	The integrated nature of the Cuban health system and close social networks within the society at large, some cross-contamination between study arms might have occurred. The output of the different elements making up the intervention components was not measured separately, it was not possible to sort out which ones may had contributed most to the outcome. The inclusion of process evaluations has been encouraged for assessing multi-	II, A

			diagnosis of hypertension documented in their medical record		the adjusted odds ratio of having controlled hypertension was twice higher in the study's intervention arms than in the usual care arm.		component interventions	
7	Roumie, C. L., Elasy, T. A., Greevy, R., Griffin, M. R., Liu, X., Stone, W. J., Wallston, K. A., Dittus, R. S., Alvarez, V., Cobb, J., & Speroff, T. (2006).	Cluster RCT	Hospital-based and community-based clinics in the Veterans Affairs Tennessee Valley Healthcare System. 1341 veterans with essential hypertension (cared for by 182 providers) who have had 2 or more blood pressure measurements greater than 140/90 mm Hg in a 6-month period and were taking a single antihypertensive agent.	Providers were randomly assigned to 1 of 3 study groups: provider education only; provider education and alert; or provider education, alert, and patient education. All interventions were completed during the week of 06/14/2004-06/18/2004 with follow-up continuing through 12/31/2004 to evaluate the effectiveness of provider and patient interventions in	The multifactorial intervention in addition to the patient education show improvement in blood pressure control when compared with the providers education alone. Patients of providers who were randomly assigned to the patient education group had better blood pressure control (138/75 mm Hg) than those in the provider education and alert or provider education alone	Charlson´Deyo comorbidity score systolic blood pressure less than 140 mm Hg	Follow-up blood pressure measurements were missing for 27% of study patients. The study could not detect a mechanism by which patient education improved blood pressure control.	I, B

				improving blood pressure control.	groups (146/76 mm Hg and 145/78 mm Hg, respectively)			
8	Tan, H.-S., Balasubramaniam, I.-S., HSS, A.-S., Yeong, M.-L., Chew, C.-C., Singh, R.-K. P., Leow, A.-Y., Damanhuri, F.-Z. M., & Verasingam, S. (2019).	Interventional quasi-experimental study	240 cases were collected from 12 hospitals in the Perak region, Malaysia	A new protocol was introduced called prolonged neonatal jaundice registry to monitor monthly returns on prolonged neonatal jaundice cases from all hospital. The new protocol was distributed statewide upon agreement of stakeholders. This new protocol aims to improve the current management of Prolonged Neonatal Jaundice.	The regional evidenced-based prolonged neonatal jaundice management protocol had managed to use a risk stratification approach and successfully reduced the number of visits, investigations and improved the quality of care for neonates.	number of visits. Self-reporting surveillance system Prolonged neonatal jaundice registry Numerical variables were calculated as mean and standard deviation, and independent t-test was employed to compare mean generated from data collected from pre- and post-intervention Categorical data collected was presented in the form of frequency and percentages	Sampling method: Case notes were conveniently selected by pediatricians during the pre-intervention phase, and this could result in sampling bias.	II, A

9	Treciokiene, I., Postma, M., Nguyen, T., Fens, T., Petkevicius, J., Kubilius, R., Gulbinovic, J., & Taxis, K. (2021).	Systematic review and meta-analysis	PubMed, EMBASE and CINAHL databases were searched for randomized control trials (RCTs) of interventions on lifestyle modifications of hypertensive patients which were performed by healthcare professionals (physician, nurse, pharmacist) and which reported blood pressure measurements. Thirty-five clinical trials were included in the review. In the studies, 22,715 patients were randomized; the mean age was 58.1 years, 49% were female, 69% used antihypertensive medications. At least 23% of	The study determined whether healthcare professional led interventions on lifestyle modifications in patients with hypertension would be effective in lowering blood pressure to better manage cardiovascular risks.	The study results support the idea that the modification of lifestyle is important for lowering blood pressure and managing cardiovascular risk. Results are in line with other systematic reviews on different types of interventions. Internet-based interventions showed to reduce systolic blood pressure by 3.8 mmHg and diastolic blood pressure by 2.1 mmHg and digital interventions to reduce systolic blood pressure by 3.74 mmHg and diastolic blood pressure by 2.37 mmHg. Self-monitoring of hypertension was associated with a significant	Systolic blood pressure. Diastolic blood pressure	This study was the first systematic review on healthcare professional-led lifestyle interventions focusing on individual hypertensive patients. Only two studies with blood pressure increase after an intervention were found. Causes of heterogeneity could be comorbidities, the number of medications or the age of the patients, but the reasons were not identified, as individual patient data would have been required. Differences in terms of interventions, data collection	II, B

			included patients were diagnosed with diabetes. 30 were individual randomized controlled trials and 5 were cluster randomized trials.		decline systolic blood pressure by 3.96 mmHg and diastolic blood pressure by 1.85 mmHg.		methods and setting may explain the heterogeneity as well.	
10	Zabler, B., Tsai, P.-Y., Fendrich, M., Cho, Y., Taani, M. H., & Schiffman, R. (2018).	Two-group randomized clinical trial pilot study	Free community medical clinic serving primarily low-income African Americans. With > 160 persons with hypertension seen per month across three locations, this clinic provided excellent access to the target population. 59 non-Hispanic Black participants in the study has an average age of 53.73 years and 63% were women	Individual and Family Self-Management Theory (IFSMT provided the framework for this study which examined the impact of an innovative ecological nurse case management intervention for low-income African American adults on multiple variables related to the IFSMT 'Context' (gender and perceived stress) and 'Process' (self-efficacy),	The RCT provided preliminary support for the innovative, well defined nurse case management intervention to improve hypertension self-management for low-income African Americans. four of the seven variables framed by the IFSMT demonstrated significant changes over six months period	Hypertension self-management Cohen's d=55 Mixed model analysis was used to estimate the differences between ENCM intervention group and control related to changes in the identified IFSMT proximal and distal outcome variables.	Pilot study with a small sample size. The participants on average had hypertension controlled in the prehypertension range which may have limited the changes in measurements over time. Pilot study results are limited to generalizability to other low-income African	I, C

				and 'Proximal' and 'Distal' 'Outcomes' components. The Ecological nurse case management intervention relies on an assumption that given the proper tools (i.e. knowledge, skills and support) individuals can learn to better self-manage their symptoms on a day to day basis and better utilize the health care resources available to them. ENCM is grounded in an acknowledgment of individual/family strengths and resilience.	of this pilot study. While the 'Process' variable of self-efficacy only showed trends of changing in the hypothesized direction, the 'Context' variable, perceived stress, showed significant ($p = .047$) change during that time. The systolic blood pressure showed no group effect or time effect, but did demonstrate a significant group by time interaction effect at month 6 ($p = .037$).	Multiple imputation (mi) methods	American adults attending clinics with other models of care. Study took place in an urban setting and would not be generalizable to other settings.	

Appendix C

HELM Survey

HYPERTENSION KNOWLEDGE SCALE (HELM)

1) A person is considered to have hypertension if either their systolic blood pressure is 140 or higher or their diastolic is 90 or higher on two separate occasions.

    a. True
    b. False

2) Most people can tell when their blood pressure is high because they feel bad.

    a. True
    b. False

3) Uncontrolled hypertension can lead to which of the following:

    a. Lung Cancer
    b. Kidney Failure
    c. High Cholesterol
    d. Diabetes

4) Which of the following increases your risk of having hypertension?

    a. Weight lifting
    b. Drinking more than 2 cups of coffee a day
    c. Smoking a pack of cigarettes daily
    d. Gaining 15 pounds

5) People with hypertension do not need to take medicine if they exercise regularly.

    a. True
    b. False

6) Which of the following statements about taking blood pressure medicine is TRUE?

    a. Blood pressure medicine should always be taken with food
    b. More than one type of blood pressure medicine can be taken at the same time
    c. Blood pressure medicine works best if it is taken at bedtime
    d. Blood pressure medicine should not be taken if a person drank alcohol

7) Most of the salt Americans eat is added with a salt shaker.

    a. True

b. False

8) There are about as many calories in 12 ounces of regular orange juice as there are in 12 ounces of regular cola.

a. True
b. False

9) An overweight 60-year-old man has hypertension. He drinks one bottle of beer and 4 cups of regular coffee a day. He adds regular table salt to his food at most meals. Which one of the following changes is the most likely to lower his blood pressure?

a. Lose 10 pounds
b. Stop drinking alcohol
c. Switch to decaffeinated coffee
d. Switch to sea salt

10) Which one of the following changes to your diet is most likely to lower blood pressure?

a. Eat more fruits, vegetables, whole grains, and low fat dairy products
b. Eliminate spicy foods
c. Drink one glass of red wine daily
d. Drink herbal tea instead of coffee

11) Which one of the following statements about exercise and blood pressure is TRUE?

a. People who are on their feet most of the day will not benefit from more exercise
b. Exercising for 30 minutes every day lowers blood pressure more than exercising for 30 minutes, 3 days a week
c. Weight lifting should be avoided by people with high blood pressure
d. When exercising, you must raise your heart rate to at least 100 beats a minute to improve blood pressure

12) A man reports that his blood pressure is 148/78 mm Hg when he checks it using the blood pressure machine in the pharmacy, 144/66 mm Hg in his family doctor's office, and 132/74 mm Hg when he checks it at home. Which of the following statements is TRUE?

a. It is common for blood pressure reading to vary
b. The highest blood pressure reading is the correct one
c. The lowest blood pressure reading is the correct one
d. He can be reassured that his blood pressure is normal

13) When measuring your blood pressure at home, you should:

a. Always take your reading before you take your blood pressure medicine

b. Take several readings, a minute or two apart, and record the lowest one
c. Take your blood pressure right after exercising and at least two hours after a meal
d. Take two readings, a minute or two apart, and write down the average value

14) Blood pressure is measured with two numbers, an upper number and a lower number. It is usually written as upper/lower. If someone is told that their goal blood pressure is 126/76, when have they reached that goal?

a. When the upper is below 126 and the lower is below 76
b. When the upper is below 126, even if the lower is over 76
c. When the lower is below 76, even if the upper is above 126
d. When the average of the upper and the lower is less than 100

Reference:

Schapira M, Fletcher K, Eastwood D, Hayes A, Patterson L, Ertl K, Whittle J. The development and validation of the Hypertension Evaluation of Lifestyle and Management (HELM) knowledge scale. *J Clin Hypertens*. 2012 Jul; 14(7):461-6.

Appendix D

Clinician Satisfaction Survey

Clinician Satisfaction Survey

1. **How would you rate the quality of education that was provided to you by the DNP student?**

   Satisfied Neutral Not Satisfied

2. **How satisfied were you with the different forms of education on hypertension?**

   Satisfied Neutral Not Satisfied

3. **How did you feel about the amount of time the DNP student spent on education for the providers?**

   Satisfied Neutral Not Satisfied

4. **How satisfied do you feel about following the standardized protocol?**

   Satisfied Neutral Not Satisfied

5. **How satisfied are you with the hypertension education you are providing your patients now?**

   Satisfied Neutral Not Satisfied

6. **How satisfied are you about the teach-back method?**

   Satisfied Neutral Not Satisfied

7. **How would you rate your communication with your patients when using the teach-back method?**

   Satisfied Neutral Not Satisfied

8. **How satisfied are you with your questions and concerns being addressed during the educational session held by the DNP student?**

   Satisfied Neutral Not Satisfied

9. **Were you satisfied with the amount of time that was spent on hypertension education with the DNP student?**

   Satisfied Neutral Not Satisfied

10. **What is your satisfaction rate on using this standardized protocol in practice for your hypertensive patients?**

    Satisfied Neutral Not Satisfied

Appendix E

Healthcare Provider Survey

Healthcare Provider Survey: Hypertension Education and Management

1. Do you schedule patients for follow-up appointments?

Yes Somewhat No

2. Do you prescribe antihypertensive drugs to patients with high blood pressure?

Yes Somewhat No

3. Do you have a concrete understanding of normal blood pressure and high blood pressure?

Yes Somewhat No

4. Do you follow-up with your patients suffering from high blood pressure more often than patients who are do not have hypertension?

Yes Somewhat No

5. Do you use a multifaceted form of education for patients?

Yes Somewhat No

6. Does your average consultation with your patient at initial consultation (first visit) require more time then subsequent visits (follow-up or regular visits) for management of hypertension?

Yes Somewhat No

7. Do you utilize the teach-back method for patients that will be monitoring their own blood pressure at home?

Yes Somewhat No

8. Do you supply your patients with a blood pressure logs to track their blood pressure at home?

Yes Somewhat No

9. Do you utilize virtual follow-up appointments for you patients that are not complicated?

Yes Somewhat No

10. Do you provide both didactic and teach-back forms of hypertension education during the follow-up appointment?

Yes Somewhat No

11. Do you encourage your patients to stay engaged with their care?

Yes Somewhat No

12. Do you follow-up with patients via phone call after their initial diagnosis of hypertension?

Yes Somewhat No

13. Do you go through the patient education forms with patients and answer questions?

Yes Somewhat No

14. Does the process you have in place for managing your patients hypertension now take 10 minutes or less?

Yes Somewhat No

15. Are you up-to-date with the latest science on hypertension management and prevention?

Yes Somewhat No

16. Do you follow the American Heart Associate Guidelines?

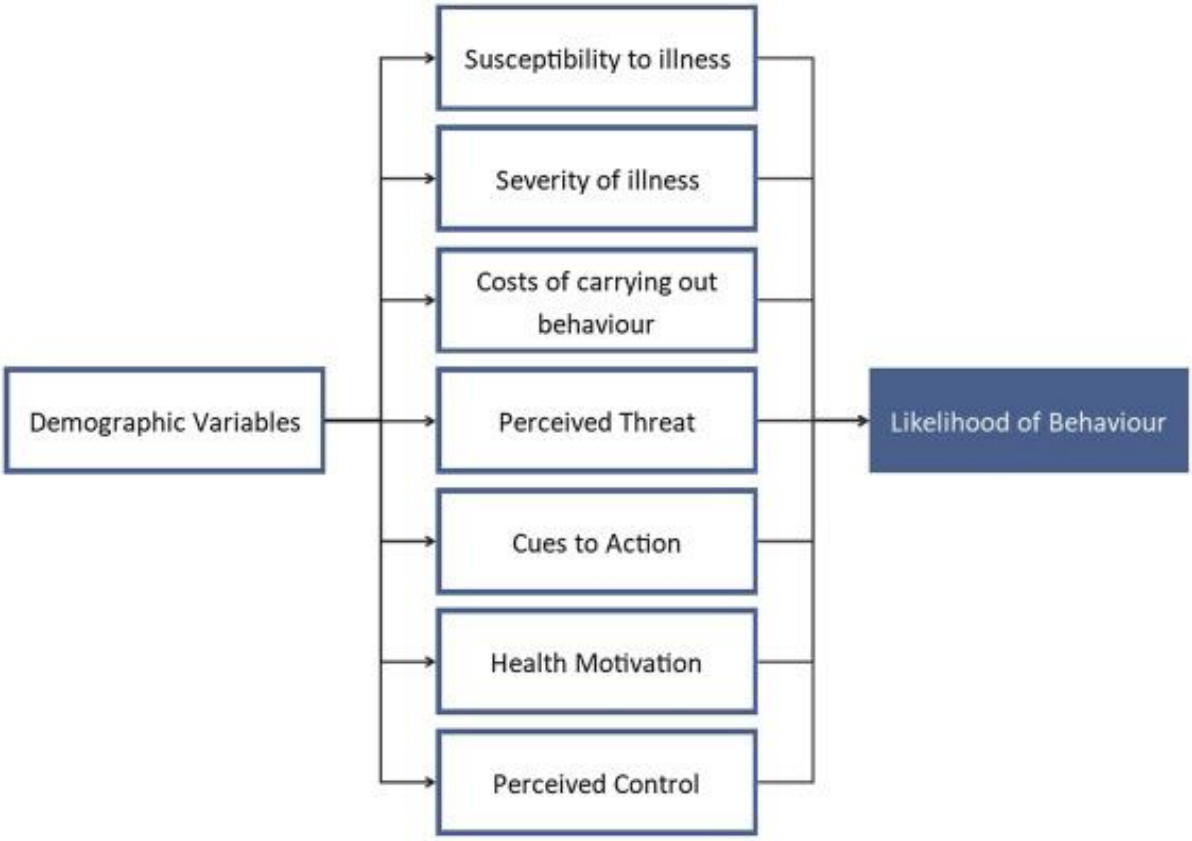
Yes Somewhat No

17. Do you find that patients are not adherent to medication/lifestyle modification changes?

Yes Somewhat No

Appendix F

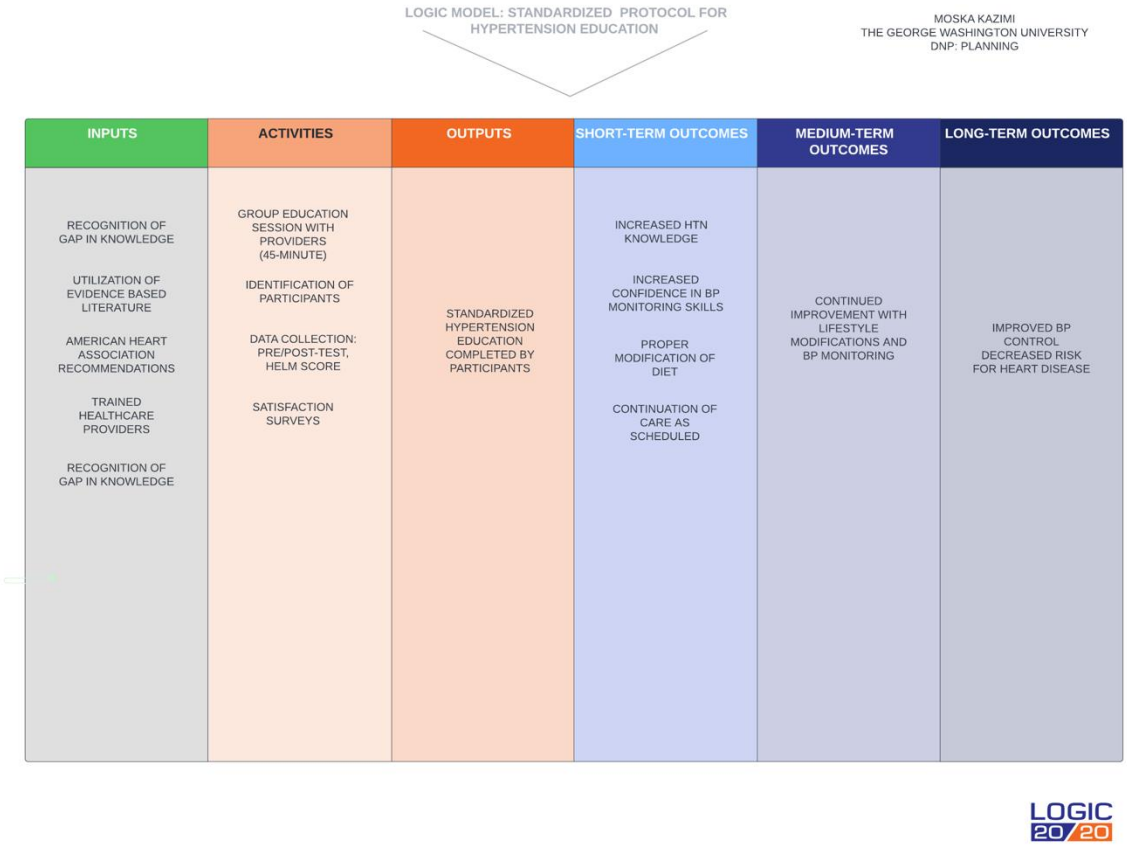
Health Belief Model



Source: (Mckellar & Sillence, 2020)

Appendix G

Logic Model



Appendix H

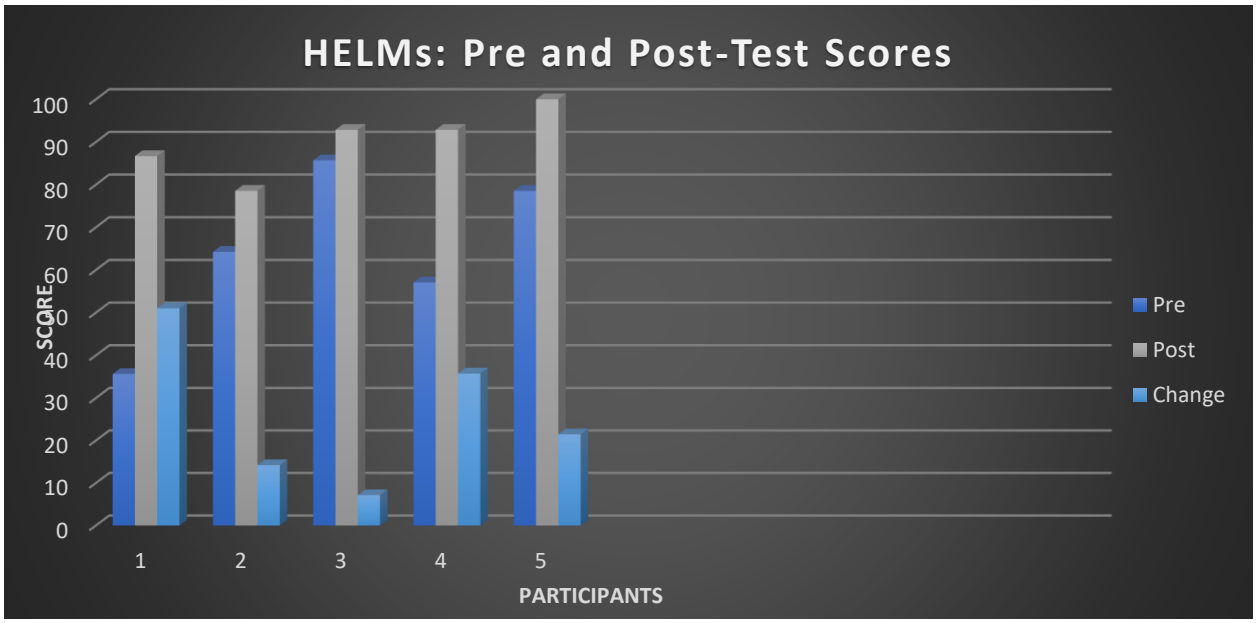
Gantt Chart

	DNP Project Timeline April 2023 – April 2024												
	04	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**	**01**	**02**	**03**	**04**
Submit DNP Project Proposal													
Develop Didactic portion of program, list of competencies for teach-back method													
Obtain approval for the use of HELM survey tool													
Choose program dates													
Email office manager for assistance with the recruitment of providers													
Recruitment email sent to providers													
Recruit patients meeting the criteria													
Emails sent to office manager and medical director on the progress that has been made													
Implement Pre-test and Post-test for providers (Healthcare Provider Survey) and, the didactic/teach-back method HTN course (1-day session)													
Implement Pre-test and Post-test for clinicians (HELM survey & Patient satisfaction survey), Program: didactic and teach-back HTN educational session (45-minute session)													
Analyze and input data													
Evaluation/Dissemination and Final Steps													

Appendix I

Pre and Post-Test (HELMs): Bar Graph (n=5)

Test	Year	Month	Scores
Pre	2023	1	35.65
Pre	2023	1	64.25
Pre	2023	1	85.7
Pre	2023	1	57.1
Pre	2023	1	78.55
Post	2023	2	78.55
Post	2023	2	85.7
Post	2023	2	92.85
Post	2023	2	92.85
Post	2023	2	100



Appendix J

T-Test: Pre and Post-Test (HELMs) (n=5)

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre_test	64.2500	5	19.58108	8.75693
	Post_test	89.9900	5	8.15225	3.64580

Paired Samples Correlations

		N	Correlation	Significance One-Sided p	Significance Two-Sided p
Pair 1	Pre_test & Post_test	5	.801	.052	.104

Paired Samples Test

		Paired Differences					t	df	Significance One-Sided p	Significance Two-Sided p
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper				
Pair 1	Pre_test - Post_test	-25.74000	13.93792	6.23323	-43.04621	-8.43379	-4.129	4	.007	.014

Paired Samples Effect Sizes

			Standardizer[a]	Point Estimate	95% Confidence Interval	
					Lower	Upper
Pair 1	Pre_test - Post_test	Cohen's d	13.93792	-1.847	-3.328	-.309
		Hedges' correction	17.46859	-1.474	-2.656	-.246

a. The denominator used in estimating the effect sizes.
Cohen's d uses the sample standard deviation of the mean difference.
Hedges' correction uses the sample standard deviation of the mean difference, plus a correction factor.

Appendix K

Clinician Satisfaction Survey Results (n =5)

Questions	N	Percent	Mean	SD
Q1: How would you rate the quality of education that was provided to you by the DNP student?				
1- Satisfied	5	100%	1.0	0
2- Neutral	0	0%		
3- Not Satisfied	0	0%		
Q2: How satisfied were you with the different forms of education on hypertension?				
1- Satisfied	5	100%	1.0	0
2- Neutral	0	0%		
3- Not Satisfied	0	0%		
Q3: How did you feel about the amount of time the DNP student spent on education for the providers?				
1- Satisfied	5	100%	1.0	0
2- Neutral	0	0%		
3- Not Satisfied	0	0%		
Q4: How satisfied do you feel about following the standardized protocol?				
1- Satisfied	4	80%	1.2	0.2
2- Neutral	1	20%		
3- Not Satisfied	0	0%		
Q5: How satisfied are you with the hypertension education you are providing your patients now?				
1- Satisfied	5	100%	1.0	0
2- Neutral	0	0%		
3- Not Satisfied	0	0%		
Q6: How satisfied are you about the teach-back method?				
1- Satisfied	5	100%	1.0	0
2- Neutral	0	0%		
3- Not Satisfied	0	0%		
Q7: How would you rate your communication with your patients when using the teach-back method?				
1- Satisfied	4	80%	1.2	0
2- Neutral	1	20%		
3- Not Satisfied	0	0%		
Q8: How satisfied are you with your questions and concerns being addressed during the educational session held by the DNP student?				
1- Satisfied	3	60%	1.4	0.2
2- Neutral	2	40%		
3- Not Satisfied	0	0%		

Q9: Were you satisfied with the amount of time that was spent on hypertension education with the DNP student?					
	1- Satisfied	4	80%	1.2	0.2
	2- Neutral	1	20%		
	3- Not Satisfied	0	0%		
Q10: What is your satisfaction rate on using this standardized protocol in practice for your hypertensive patients?					
	1- Satisfied	5	100%	1.0	0
	2- Neutral	0	0%		
	3- Not Satisfied	0	0%		

Appendix L

Healthcare Provider Pre and Post-Survey (n=5)

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre_survey	1.9059	85	.92097	.09989
	Post_survey	1.1412	85	.44059	.04779

Paired Samples Correlations

		N	Correlation	Significance One-Sided p	Significance Two-Sided p
Pair 1	Pre_survey & Post_survey	85	.385	<.001	<.001

Paired Samples Test

		Paired Differences					t	df	Significance One-Sided p	Significance Two-Sided p
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper				
Pair 1	Pre_survey – Post_survey	.76471	.85422	.09265	.58045	.94896	8.253	84	<.001	<.001

Paired Samples Effect Sizes

			Standardizer[a]	Point Estimate	95% Confidence Interval	
					Lower	Upper
Pair 1	Pre_survey – Post_survey	Cohen's d	.85422	.895	.641	1.145
		Hedges' correction	.86194	.887	.636	1.135

a. The denominator used in estimating the effect sizes.
Cohen's d uses the sample standard deviation of the mean difference.
Hedges' correction uses the sample standard deviation of the mean difference, plus a correction factor.

Appendix M

Healthcare Provider Pre and Post-Survey Analysis (n=5)

	Pre-test		Mean	SD	Post-test		Mean	SD
Q1: Do you schedule patients for follow-up appointments?	**N**	**Percent**	1.6	0.8	**N**	**Percent**	1.2	0.4
1- Yes	3	60%			4	80%		
2- Somewhat	1	20%			1	20%		
3- No	1	20%			0	0%		
Q2: Do you prescribe antihypertensives medications to patients with high blood pressure?	**N**	**Percent**	1.2	0.4	**N**	**Percent**	2.6	0.5
1- Yes	4	80%			0	0%		
2- Somewhat	1	20%			2	40%		
3- No	0	0%			3	60%		
Q3: Do you have concrete understanding of normal versus high blood pressure?	**N**	**Percent**	1.2	0.4	**N**	**Percent**	1.0	0.0
1- Yes	4	80%			5	100%		
2- Somewhat	1	20%			0	0%		
3- No	0	0%			0	0%		
Q4: Do you follow-up with your patients suffering from high blood pressure more often than patients who do not have high blood pressure?	**N**	**Percent**	2.4	0.5	**N**	**Percent**	1.2	0.4
1- Yes	0	0%			4	80%		
2- Somewhat	3	60%			1	20%		
3- No	2	40%			0	0%		
Q5: Do you use a multifaceted form of education for hypertensive patients?	**N**	**Percent**	2.4	0.5	**N**	**Percent**	1.0	0.0
1- Yes	0	0%			5	100%		
2- Somewhat	2	40%			0	0%		
3- No	3	60%			0	0%		

			Mean	SD			Mean	SD
Q6: Does your average consultation with your patients at the initial (first visit) require more time than subsequent visits (follow-up or regular visits) for management of hypertension?	**N**	**Percent**	2.6	0.5	**N**	**Percent**	2.8	0.4
1- Yes	0	0%			4	80%		
2- Somewhat	1	20%			1	20%		
3- No	4	80%			0	0%		
Q7: Do you utilize the teach-back method for patients that will be monitoring their own blood pressure at home?	**N**	**Percent**	2.6	0.5	**N**	**Percent**	2.6	0.5
1- Yes	1	0%			5	100%		
2- Somewhat	2	40%			0	0%		
3- No	3	60%			0	0%		
Q8: Do you supply your patients with blood pressure logs to track their blood pressure at home?	**N**	**Percent**	3	0	**N**	**Percent**	3.0	0.0
1- Yes	0	0%			5	100%		
2- Somewhat	0	0%			0	0%		
3- No	5	100%			0	0%		
Q9: Do you utilize virtual follow-up appointments for your hypertensive patients that are not complicated?	**N**	**Percent**	3	0	**N**	**Percent**	3.0	0.0
1- Yes	0	0%			5	100%		
2- Somewhat	0	0%			0	0%		
3- No	5	100%			0	0%		
Q10: Do you provide both didactic and teach-back forms of hypertension education during the follow-up appointments?	**N**	**Percent**	2.8	0.4	**N**	**Percent**	2.8	0.4
1- Yes	0	0%			5	100%		
2- Somewhat	1	20%			0	0%		
3- No	4	80%			0	0%		
Question	**Pretest**				**Posttest**			
			Mean	**SD**			**Mean**	**SD**
Q11: Do you encourage your patients to stay engaged with their care?	**N**	**Percent**	1.0	0.0	**N**	**Percent**	1.0	0.0
1- Yes	5	100%			5	100%		
2- Somewhat	0	0%			0	0%		

3- No	0	0%			0	0%		
Q12: Do you follow-up with your hypertensive patients via phone call after initial diagnosis of hypertension	**N**	**Percent**	3.0	0.0	**N**	**Percent**	3.0	0.0
1- Yes	0	0%			4	800%		
2- Somewhat	0	0%			1	20%		
3- No	5	100%			0	0%		
Q13: Do you go through the patient education forms with patients and answer their questions?	**N**	**Percent**	1.0	0.0	**N**	**Percent**	1.0	0.0
1- Yes	5	100%			5	100%		
2- Somewhat	0	0%			0	0%		
3- No	0	0%			0	0%		
Q14: Does the process you have in place for managing your patients' blood pressure now take 10 minutes or less?	**N**	**Percent**	1.2	0.4	**N**	**Percent**	1.0	0.0
1- Yes	5	100%			5	100%		
2- Somewhat	0	0%			0	0%		
3- No	0	0%			0	0%		
Q15: Are you up to date with the latest science on hypertension management and prevention?	**N**	**Percent**	1.2	0.4	**N**	**Percent**	1.2	0.4
1- Yes	4	80%			5	100%		
2- Somewhat	1	20%			0	0%		
3- No	0	0%			0	0%		
Q16: Do you follow the American Heart Association Guidelines?	**N**	**Percent**	1.0	0.0	**N**	**Percent**	1.0	0.0

1- Yes	5	100%			5	100%		
2- Somewhat	0	0%			0	0%		
3- No	0	0%			0	0%		
Q17: Do you find that patient are not adherent to medication/lifestyle modification changes?	**N**	**Percent**	1.0	0.0	**N**	**Percent**	1.0	0.0
1- Yes	5	100%			5	100%		
2- Somewhat	0	0%			0	0%		
3- No	0	0%			0	0%		

Appendix N

Data Dictionary

Data Element	Data Label	Data Type	Definition/Purpose	Data Values & Coding
Provider Identifier	Pro#	Alpha-numeric	Generated unique identifier	Alpha-numeric
Role	Clin_role	Categorical	What is your clinical role	1, Nurse Practitioner 2, Physician Assistant
Usability Rating	Clin_usability	Categorical	Overall, I found the new blood pressure education template easy to use.	1, Satisfied; 2, Neutral; 3, Not Satisfied
Suggestions	Clin_suggestions	Text	Please share suggestions for changes or improvements to the blood pressure education.	N/A
Improved Efficiency	Clin_efficiency	Categorical	The new provider education has improved the efficiency of knowledge on blood pressure.	1, Satisfied; 2, Neutral; 3, Not Satisfied
Overall Satisfaction	Clin_satisfaction	Categorical	Overall, I am satisfied with the new blood pressure education for patients.	1, Satisfied; 2, Neutral; 3, Not Satisfied
Pre-Test Scores	Pre_test	Alpha-numeric	Hypertension knowledge prior to educational sessions	Alpha-numeric
Post-Test Scores	Post_test	Alpha-numeric	Hypertension knowledge after educational sessions	Alpha-numeric
Pre- Healthcare Provider Survey	Pre_survey	Categorical	How often do you use multiple forms of HTN education for patients, and do you do follow-up care for all hypertensive patients.	1, Yes; 2, Somewhat; 3, No
Post- Healthcare Provider Survey	Post_survey	Categorical	Overall usage of multiple forms of hypertension education for patients and follow-up care after intervention	1, Yes; 2, Somewhat; 3, No

Appendix O

Data Collection

Aims/Evaluation Questions	Measures	Measure Type	Data Source	Recruitment Method/ Population	Timing/Frequency	Calculation/ Statistics
Develop an evidence-based protocol for providers to use to educate patients to monitor and manage their blood pressure Will the protocol be used by all healthcare providers?	% of NP/PA utilizing the new hypertension patient education method	Process	Survey completion	Staff meeting and email	Pre-and post-test beginning of project and after	Percentage (100%)
Provide educational intervention in accordance with the standards outlined for full-time Nurse Practitioners and Physician Assistants, incorporating information and guidelines provided by The American Heart Association for patient education on blood pressure. Does providing educational interventions for Nurse	Healthcare Provider Survey	outcome	Items selected on the healthcare provider survey	Staff meeting and email	Pre-and post-test beginning of project and after	Mean Score of 8 or higher

Practitioners and Physician Assistants assist in enhancing theirs and their patients knowledge on HTN management?						

Appendix N: Final DNP Project Signature Form

All DNP Projects require a Final Paper, Poster, and Presentation to the DNP Project Team. After the presentation, the DNP Project Team will complete this form. Students and DNP Project Team Members should also keep a copy for their records.

Full Title of DNP Project: _____

Name of DNP Project Team Members

Student(s): _____

DNP Project Primary Advisor: _____

DNP Project Second Advisor: _____

DNP Project Team Member: _____

Date of Presentation: _____

Date of DNP Project IRB Determination/Approval: _____

Final DNP Products

Component **Final DNP Paper**
Cover Page, Table of Contents, Abstract, and general formatting meet APA requirements and GWSON instructions. Earlier components reflect past tense. All revisions and updates from DNP Project Proposal addressed.
Results: - Data is clearly presented - Data analysis is appropriate to the project - Tables and Figures are clearly summarized.
Discussion: Student synthesizes literature, results, and overall summation of findings. Includes Impact and Implications for: - Practice - Healthcare Policy - Quality and Safety - Executive Leadership - Other as related to the DNP project
Plans for Sustainability and Future Scholarship are articulated.
Summary: provides closure to all elements of the DNP Project.
Appendices: expanded to include all relevant tables, figures, and project related materials.
Component **Final DNP Poster**
Required Content is present: Full Title of DNP Project with Student as first author followed by Primary Advisor, Team Members

Background Objectives/Aims Methods Results Conclusions Readability
Results: - Data is clearly presented - Data analysis is appropriate to the project - Tables and Figures are clearly summarized.
Component **Final DNP Project Presentation**
Formal Presentation of DNP Project: Presentation is presented on the George Washington-School of Nursing template slides and includes all relevant aspects of the project. The student's appearance and presentation skills meet doctoral expectations.
Student Response to Challenges.
The student responds appropriately to all questions from the DNP Project Team.

Comments: _____

Describe Corrective Actions if Revisions Required
(Use additional paper if necessary)

Select the Outcome of the presentation:

☐ Approved as presented ☐ Approved with minor revisions ☐ Reject project

Student Signature: _____

DNP Project Primary Advisor Signature: _____

DNP Project Second Advisor Signature: _____

DNP Project Team Member Signature: _____

Date: _____

***Refer to the **FINAL Steps** of the DNP Project Process