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## Staff Education for Hypertension Diagnosis, Management, and Treatment

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# Walden University

College of Nursing

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has been found to be complete and satisfactory in all respects,  
and that any and all revisions required by  
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2026

Executive Summary: Staff Education Project  
Staff Education for Hypertension Diagnosis, Management, and Treatment  
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Executive Summary Submitted in Partial Fulfillment  
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## Summary

Hypertension (HTN) is a significant public health concern, and educating nursing staff is crucial to improving patient outcomes and supporting public health initiatives. This staff education project focused on improving the quality of hypertension management by empowering nurses to provide evidence-based, patient-centered care. The practice-focused question is as follows: Will HTN education improve staff knowledge of HTN diagnosis, treatment, and management? I employed a quantitative pre-test/post-test design to measure changes in staff ( $n = 10$ ) knowledge before and after training. Descriptive statistics measure knowledge gain and the effectiveness of educational strategies. The pre-test percentage of correct answers improved from 79% to 96% on the post-test, indicating a mean 17 percentage point gain in knowledge from pretest to post-test. The knowledge gain reflected the high level of pretest knowledge. The staff education evaluation received an overall rating of 90%, indicating strong agreement that the content was useful and applicable to their nursing roles and suggesting that participants will apply the information in practice. Key recommendations included delivering regular refresher courses on evolving national guidelines, especially the evidence-based resources from organizations such as the American College of Cardiology and the American Heart Association. The implications of this project include the important role of nurses in helping patients address lifestyle and socioeconomic factors, enhancing patient compliance, and promoting health equity. Culturally competent HTN education and emphasis on individualized patient care can improve care delivery and communication, particularly in underserved communities, ultimately leading to positive social change.

## Background

HTN, or high blood pressure (BP), is a common chronic condition defined by readings of 130/80 or higher. It poses serious health risks, including cardiovascular diseases, stroke, and kidney failure, affecting approximately 1.3 billion adults globally and contributing to over 10.8 million deaths annually (Amide et al., 2025). In the United States, uncontrolled HTN costs an estimated \$131 billion to \$198 billion each year (CDC, 2024). While antihypertensive medications are effective, many patients struggle with adherence or are unaware of their condition, increasing their morbidity and mortality risks. Effective management is crucial and involves both lifestyle changes and medication, with nurses playing a key role in patient education. Notably, around 30% of patients do not follow treatment regimens (Mahmood et al., 2020). In 2010, only 46.5% of hypertensive adults were aware of their condition, 36.9% were on medication, and just 13.8% achieved controlled BP (Golestaneh et al., 2021).

Key barriers to effective HTN management include gaps in healthcare provider education, limitations within the health system, and patient-related challenges. Inconsistent understanding of HTN management among healthcare providers results from a lack of structured education, inconsistent training, outdated knowledge, and a lack of standardized care protocols. System limitations to quality care delivery include high patient loads, equipment shortages, and misaligned institutional policies that can complicate care, further hindering effective care delivery. Multiple challenges at the health systems level impact patients' blood pressure outcomes. Byiringiro et al. (2024) noted the need to understand gaps in health systems to improve their readiness to manage the rising burden of hypertension.

Patient factors such as cultural practices and values, language barriers, low health literacy rates, and nonadherence to medical care management and self-care can complicate patient care. Approximately 40% of patients with hypertension demonstrated poor medication adherence according to data from pharmacy records and electronic health records. Common concerns included whether lifelong medication use would be necessary, with many patients expressing reluctance to take multiple antihypertensive drugs. A significant number of patients indicated a preference for trying traditional herbal remedies before committing to conventional pharmacotherapy. In-house quality metrics showed that HTN was controlled in 61% of the project site clinics, suggesting the need for improvement. Effective, updated patient education from providers is vital, as gaps in patient knowledge can negatively impact their self-care management. Providers must have cultural awareness, improved communication skills, and the knowledge and competency to address patients' adherence issues. Health care providers support lifestyle changes for HTN management by educating and empowering patients to engage actively in their care. Many patients find it difficult to adopt healthier behaviors that conflict with their cultural norms, leading to non-adherence, which hampers successful HTN management. Lifestyle modifications that align with patients' cultural practices can enhance long-term commitment to managing HTN (Miezah & Hayman, 2024).

The project question was: Will a HTN education program for healthcare staff in underserved urban area improve staff knowledge of diagnosis, treatment, and management? The primary objective of this project was to determine whether such an education program would enhance healthcare staff members' understanding of hypertension. Education programs specifically designed for healthcare personnel in

underserved urban environments are expected to improve staff knowledge of hypertension diagnosis, treatment, and management. Multiple research studies have shown the effectiveness of nurse-led interventions. Nursing-led approaches are gaining prominence and have demonstrated effectiveness in managing hypertension (Bulto et al., 2024). This review revealed diverse strategies that, overall, were more effective than standard care. Nursing-led interventions produced greater systolic blood pressure (SBP) reductions at 6 months or less, with diminished effects at 12 months or longer; diastolic blood pressure (DBP) was not significantly affected. Nursing-led care improved dietary habits and physical activity, while the impact on smoking and alcohol use varied. According to Bulto et al. (2024), incorporating nursing-led interventions can enhance hypertension management and support cardiovascular disease prevention. I sought to enhance patient education through improved diagnostic and treatment skills, and promoting adherence to lifestyle changes and medication, which was expected to lead to better blood pressure control and lower cardiovascular risk.

By strengthening staff members' diagnostic and treatment skills, the project sought to enhance the precision and effectiveness of patient education, facilitating the teaching of lifestyle changes and medication regimens. This knowledge, in turn, was expected to contribute to improved blood pressure control and reduced cardiovascular risk. The project's success was demonstrated through a significant increase in hypertension knowledge, as reflected in improved scores on posttest questionnaires administered after the educational program. The program's design incorporated multiple-choice questions to assess whether the training effectively increased staff knowledge in this underserved urban location. Additionally, the educational content was carefully

aligned with the 2025 guidelines established by the American College of Cardiology and the American Heart Association, ensuring its relevance and practical application in the clinical setting.

The literature review for the project supported the necessity of training staff in the diagnosis, treatment, and follow-up management of HTN, as discrepancies between clinical practice and established guidelines often arise from inconsistent adherence and limited patient engagement. Many studies indicated that post-education knowledge enhancement can significantly improve patient outcomes and blood pressure control. Stephen et al. (2022) noted that implementing nurse-led interventions in general practice for the management of HTN helps reduce blood pressure and mitigate or delay cardiovascular complications in patients with HTN. Bulto et al. (2024) conducted a systematic review to evaluate the effectiveness of nurse-led interventions in managing HTN, promoting lifestyle changes, and improving patient understanding compared to standard care. In accordance with the Joanna Briggs Institute (JBI) guidelines, the review involved a comprehensive search across multiple databases. Randomized controlled trials (RCTs) were meticulously screened and analyzed using STATA version 17.0. Thirty-seven RCTs with 9,731 participants were included in the analysis. Findings revealed that nurse-led interventions significantly reduced systolic blood pressure (mean difference,  $-4.66$ ; 95% CI,  $-6.69$  to  $-2.64$ ) and diastolic blood pressure (mean difference,  $-1.91$ ; 95% CI,  $-3.06$  to  $-0.76$ ) compared with usual care. Positive effects were noted on diet and physical activity, though changes in smoking and alcohol consumption were inconsistent. This review highlighted the benefits of nurse-led interventions in

hypertension management and emphasized the need to incorporate these strategies into standard clinical practice to combat the rising global burden of hypertension.

The educational initiative bridged the gap between evidence-based practices and real-world application, ultimately enhancing patient care. The secondary effects of educational programs on general physicians' blood pressure control and hospital patient outcomes underscore the urgency for targeted prevention and education programs for HTN. The evidence supported the notion that faculty and staff education on HTN, particularly when integrated within a team-based intervention framework, leads to improved blood pressure control and better patient outcomes. Education alone is not sufficient; however, it is crucial to the success of any intervention. The body of evidence on staff education in diagnosing, managing, and treating HTN is robust, indicating that enhanced knowledge and skills among healthcare staff lead to greater clinician confidence in patient management.

Well-informed providers tend to adhere to treatment plans, facilitating improved blood pressure management through both lifestyle changes and medication adherence. Increased knowledge also lowers the risk of HTN complications, as knowledgeable providers are better equipped to identify at-risk patients and implement preventive measures. Educational programs ensure that staff apply the latest evidence-based guidelines from credible organizations, thus promoting best practices in HTN management. Furthermore, staff education fosters teamwork among healthcare professionals, enhancing the overall management of hypertension through a collaborative, multidisciplinary approach. Strong evidence supported the effectiveness of multi-component strategies, whereby team-based education and fully implemented

measures, such as team-based care and automated patient registries, significantly improve HTN control.

Overall, the evidence consistently demonstrated that education enhances healthcare staff members' knowledge, skills, and confidence in managing HTN. In the literature review for my project, 25 scholarly articles were reviewed, and 15 with the highest-quality evidence were selected to support the project. The selected articles ranged from levels I to IV. Nine articles were level I, two were level II, three were level III, and one was level IV. The quality of all the articles supporting the project was A and B. The adequacy of this evidence is considered strong and widely supported by systematic reviews and studies that showed the effectiveness of education in improving patient health outcomes. The format, duration, and target audience of educational programs may vary, but tailored education significantly enhances healthcare providers' HTN management skills, making it a critical component of improving patient care.

### **Staff Education Project Development**

To assess staff knowledge, a pretest questionnaire was used (see Appendix A). To implement the project, a standardized training program was developed that focused on accurate blood pressure measurement techniques and patient education on lifestyle changes and medication adherence. Educational objectives defined goals to improve understanding of diagnostic criteria and treatment protocols. Educational resources included PowerPoint presentations and online modules that covered essential HTN management concepts based on the American Heart Association and the American College of Cardiology's current guidelines. Training workshops were organized in small sessions led by my mentor and me. Training encouraged interactivity and provided

opportunities for questions and answers. Training sessions were divided into three small groups to maximize participation, with assessments used to measure knowledge acquisition.

Evaluation of outcomes included establishing metrics to assess the educational program's effectiveness and focusing on knowledge retention and changes in clinical practice. Data collection at baseline and after education (see Appendix A) was essential for monitoring improvements. Analyzing participant education evaluation responses (see Appendix B) was critical for refining the program to meet educational needs. Continuous improvement of the program should be adjusted based on evaluation results to ensure staff are informed of best practices. Outcome assessment measured knowledge improvement and reassessed staff practices for consistent blood pressure measurement.

The project participants included me (the project manager) and the clinic's medical director, supervisors, and managers. This group was responsible for project planning, education design, and administrative oversight, ensuring that the educational content was clinically relevant. Other participants included educators, nurse practitioners, nurses, pharmacists, and medical assistants. An administrative staff member coordinated the schedule and logistics for the educational program. The number of participants was 10 (six nurses, three nurse practitioners, and one medical assistant).

### ***Phase 1***

The development of a staff education project focused on HTN employed a structured, evidence-based approach that emphasized multidisciplinary collaboration. This initiative progressed through three key phases: problem identification,

implementation, and evaluation, involving active participation from various stakeholders within the healthcare organization. The first step was to identify the specific challenges staff and patients face in managing HTN. A clear purpose was established: improving blood pressure measurement techniques and enhancing compliance with treatment protocols. A comprehensive review of current practices highlighted issues such as inconsistent diagnostic practices and reliance on outdated treatment guidelines, including the facility's adherence to an obsolete guideline defining HTN as 140/90 mmHg based on JNC 7. Additionally, barriers to patient adherence include financial constraints and low health literacy.

Investigating scholarly work and obtaining evidence-based guidelines from reputable organizations such as the American Heart Association and the American College of Cardiology was crucial. This information helped create effective educational materials for both patients and staff. Establishing a project team (i.e., gathering influential stakeholders, including leaders and staff) was essential to gaining support and ensuring collaboration. In partnership with my mentor, educational resources for patients were developed, covering definitions, prevalence, risk factors, complications, diagnosis, and management of HTN. The education deliverables included PowerPoint presentations, workshops, and patient handouts, and incorporated active learning techniques such as role-playing and case studies to enhance staff members' engagement in the education.

### ***Phase 2***

There were 13 participants in the education: two nurse practitioners, seven registered nurses, three licensed practical nurses, and one medical assistant. A pretest questionnaire assessed staff's baseline knowledge of HTN. These data were

crucial for measuring the impact of the training. Instead of traditional lectures, the project used interactive methods, including live presentations and group discussions with handouts and PowerPoint slides. A structured approach was employed, including a pretest to evaluate staff knowledge. The training was done three times in small groups, and the PowerPoint presentation was also sent to participants to review in their free time. To measure knowledge after the educational initiative, I collected feedback through posttest surveys. Additionally, participants completed an assessment of the education program's effectiveness and gathered suggestions for improving future presentations. In summary, the development and implementation of an education project for HTN management involved a meticulous, evidence-based process that relied on collaboration among various healthcare professionals. By engaging stakeholders, establishing a thorough training program, and employing robust evaluation methods, the project enhanced staff knowledge to improve patient care outcomes related to HTN.

### **Results**

The development of a multidisciplinary, evidence-based staff education project focused on HTN involved a structured planning approach that included problem identification, intervention application, and evaluation. The project's success hinged on engaging key stakeholders across the healthcare organization to ensure commitment and effective execution. Although 13 participants attended the education presentations, only 10 completed their pre-test/post-test questionnaires.

Evaluation after implementation was based on comparisons of pre-test and post-test knowledge questionnaire scores and a staff education evaluation survey. Table 1 indicates

improved knowledge from the pre-test to the post-test, consistent with the expectations from the literature review. Pre-test knowledge scores were high, with an average score of 79% correct answers. On the posttest, six participants scored 100%, while the remaining four scored 90%, for an average of 96% and an overall knowledge gain of 17%.

**Table 1**

*Learning Outcomes Based on Participants' Pretest and Posttest Questionnaire Scores*

(n =10)

Participant	% Pretest score	% Posttest score	% Knowledge gain
1	90	100	10
2	60	100	40
3	90	100	10
4	90	100	10
5	70	90	20
6	70	90	20
7	60	90	30
8	90	100	10
9	70	90	20
10	100	100	0
Average	79	96	17

Key results included enhanced staff confidence in the evaluation and management of hypertension. Dietary education and surveillance were included in management, along with exercise counseling. Staff demonstrated greater understanding of HTN, including its causes, risk factors, complications, and management strategies. They become more adept at accurate diagnoses, interpreting blood pressure readings, and are knowledgeable about necessary lifestyle changes. Improved education based on knowledge gained is expected to foster effective communication, leading to better patient adherence to treatment. An emphasis on teamwork in education may promote information sharing among healthcare providers, ensure access to updated protocols, and create methods for sharing best practices. The educational strategies may also support a structured inclusion of preventive

care and chronic disease management at the site. Training staff in HTN should improve diagnosis, management, and treatment, thereby enhancing patient outcomes. The staff education evaluation (Appendix B) received an overall rating of 90%, suggesting participants are likely to apply the information in practice. The organization hopes to experience reduced complications and costs as patients benefit from improved self-care management, better health, and a higher quality of life.

However, limitations did exist. Engagement with educational resources may be affected by time constraints, perceived irrelevance, or fatigue, creating gaps in understanding. A lack of emphasis on continuous education within the organizational culture may deter participation. However, educating staff on HTN is essential for effective healthcare delivery and public health. With millions affected globally, increased provider knowledge can significantly reduce incidence and prevalence rates and improve management across healthcare settings.

### **Conclusions**

Staff training improved the diagnosis, management, and treatment of hypertension at the facility. Educated staff are expected to diagnose earlier, provide standardized care, and initiate timely treatment and management, ultimately reducing serious health issues. Training empowered the participants to educate patients on lifestyle changes, medication adherence, and self-monitoring. Education enhances communication and teamwork among health professionals, which will lead to better patient care and reduced costs.

Proper training of staff and patients alike should focus on accurate blood pressure measurement, risk awareness, and lifestyle modification. The use of the latest clinical guidelines and practical examples will enhance the effectiveness of healthcare providers.

Educating staff on home monitoring technology and personalized patient care may foster confidence and improve treatment decisions. Cultural competency training, promoting trust and compliance, was essential for effective communication with patients from the facility's diverse populations.

Training addressed social determinants of health, ensuring the nurses can connect patients with local resources and support. Inclusive educational materials and collaboration among healthcare team members will enhance patient-centered care. Integrating diversity, equity, and inclusion (DEI) principles into HTN education may foster trust and improve outcomes for marginalized groups of patients. Overall, focused training will lead to better healthcare quality, more personalized care, and enhanced health equity.

Recommendations for future education and practice projects to improve HTN care at the facility include ideas for data collection and outcome measurement, as well as strategies to address patient barriers to optimal care access and use. Further study is essential to understand the long-term effects of staff education on HTN management. This includes examining knowledge retention, the role of refresher courses, and the link between staff education and patient outcomes in diverse populations. Analyzing barriers to implementing educational strategies for patients across different healthcare settings could also provide valuable insights. A comprehensive educational program for healthcare staff is vital for aligning evidence-based practices with clinical implementation. By enhancing staff knowledge and skills, we can improve patient outcomes, reduce complications, and foster a more effective, patient-centered approach to HTN care.

In summary, educating healthcare staff on HTN diagnosis, management, and treatment can lead to profound improvements in nursing practice. It may foster a culture of excellence, compassion, and understanding within the setting. When combined with a focus on diversity, equity, and inclusion, such education can catalyze positive social change that addresses health disparities and promotes equitable healthcare for all. Through these efforts, the healthcare facility can work toward a future in which HTN and its complications are managed effectively across all demographics, thereby enhancing overall population health.

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## Appendix A

### Staff Education on Hypertension Diagnosis, Management and Treatment

#### Pretest/Posttest Questions

1. Which technique for measuring blood pressure is regarded as the most precise and dependable for diagnosing and tracking hypertension?
  - a) Office blood pressure readings
  - b) Home blood pressure monitoring
  - c) 24-hour ambulatory blood pressure monitoring (ABPM)
  - d) All of the above are equally reliable.
  
2. What are the essential instructions to provide a patient prescribed an ACE inhibitor regarding potential side effects?
  - a) Expect a sudden decrease in blood pressure.
  - b) Report any persistent dry cough.
  - c) Avoid eating citrus fruits.
  - d) Increase fluid intake significantly.
  
3. Complications of uncontrolled hypertension include all except
  - a. cardiovascular diseases
  - b. Stroke
  - c. Kidney damage
  - d. Leg amputation
  
4. Lifestyle changes are fundamental in managing hypertension. Which of the following is NOT an advisable lifestyle adjustment?
  - a) DASH diet
  - b) Regular exercise
  - c) Quitting smoking
  - d) Binge drinking
  
5. These medication classes are commonly regarded as first-line treatment for uncomplicated hypertension.
  - a) Beta Blockers (Metoprolol)
  - b) Calcium channel blockers (Amlodipine)
  - c) Thiazide diuretics (Hydrochlorothiazide)
  - d) ACE inhibitors (Lisinopril)
  
6. According to the CDC's Hypertension Management Program (HMP), the three key principles for effective hypertension management?
  - a) Following medication guidelines, maintaining a healthy lifestyle, scheduling routine check-ups

- b) Monitoring blood pressure, cooperating in a team approach, educating patients
- c) Modifying risk factors, achieving blood pressure control, preventing complications
- d) Making dietary adjustments, managing stress, participating in exercise programs

7. Accurate tips for blood pressure measurement:

- a) Position the cuff directly on the bare arm.
- b) Make sure the cuff is the right size for the patient's arm.
- c) Instruct the patient to remain still and quiet.
- d) Have the patient sit in a chair with back support, keeping their feet flat on the floor or on a footstool.
- f) All the above

8. What blood pressure reading is considered Stage 1 Hypertension?

- a) 120/80 mmHg
- b) 130/85 mmHg
- c) 140/90 mmHg
- d) 160/100 mmHg

9. Which of the following is a non-modifiable risk factor for hypertension?

- a) Lack of exercise
- b) High salt intake
- c) Age
- d) Smoking

10. What diet is recommended for managing hypertension?

- a) High protein
- b) Low carb
- c) DASH diet
- d) High fat diet

## Appendix B

### Staff Education Evaluation

(Circle your answer to the questions below)

- Were the staff education objectives clearly communicated?  
Yes or No
- Were the staff education objective(s) achieved?  
Yes or No
- Was the information provided in education applicable for your role?
  - a. Not at all applicable
  - b. Not applicable
  - c. Neutral
  - d. Applicable
  - e. Very applicable
- Will the information be useful in improving patient outcomes?
  - a. Not at all useful
  - b. Not useful
  - c. Neutral
  - d. Useful
  - e. Very useful
- How likely are you to use the information provided in your interactions with patients?
  - a. Very unlikely
  - b. Unlikely
  - c. Neutral
  - d. Likely
  - e. Very likely
- Please provide suggestions for improving future educational offerings.