

Hypertension

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N102: Nursing Care of Adults

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March 31, 2023

## **Hypertension**

Albert Einstein once said, “a clever person solves a problem, a wise person avoids it.” When considering hypertension and how it is known to be a risk factor leading to further health diagnoses and complications, would you do it all to prevent or manage it? Many people who have hypertension, also known as high blood pressure, are unaware of its occurrence, often due to due to lack of symptoms or even the lack of knowledge regarding the symptoms to be expected, which is why it very well known as the “silent killer.” “Having hypertension puts you at risk for heart disease and stroke which are leading causes of death in the United States” (Facts About Hypertension, 2023). What might seem like a “minor” issue to many people, can lead to very serious, even life-threatening complications; however, it is very much achievable to follow preventative measures and manage effectively.

### **Statement of the problem**

Blood pressure is the product of cardiac output and peripheral vascular resistance. It is the pressure of blood against the walls of the arterial system. The systolic measurement of blood pressure is the peak pressure exerted against the arteries when the heart contracts and the diastolic measurement of blood pressure is the residual pressure during relaxation. Many factors can lead to fluctuation in blood pressure such as physical activity, diet, stress, medications, or even positioning of the body. Another common factor that can lead to an increase in blood pressure, often stress related, is “white coat syndrome.” This is known as the increase in blood pressure when in the healthcare setting around professionals such as doctors or nurses, but readings fall within a normal range at home. A normal blood pressure is considered 120/80 mm Hg. Elevated blood pressure is determined when the systolic pressure is between 120-129 mm Hg with the diastolic pressure lower than 80 mm Hg. Stage 1 hypertension is determined when

the systolic pressure is between 130-139 mm Hg and the diastolic pressure is between 80-89 mm Hg. Stage 2 hypertension is determined when the systolic pressure is 140 mm Hg or higher and the diastolic pressure is 90 mm Hg or higher (Hypertension, [Clinical Key] 2023). The diagnosis of hypertension is characterized by “two or more BP measurements greater than 120/80 mm Hg taken on two separate occasions using a reliable BP recording method” (Hypertension, [Lippincott] 2022). It is characterized as essential or secondary. Essential hypertension means idiopathic or unknown, secondary hypertension means that it stems from a disease process or other identifiable cause, renal disease being a very common one (Hypertension, [Lippincott] 2022).

There are a few pathophysiological theories regarding the cause of increased blood pressure such as changes in the arterial bed, abnormal increase in the tone of the sympathetic nervous system, increase in blood volume whether it be from a renal or hormonal dysfunction, arterial thickening seen in atherosclerosis, and the formation of angiotensin II resulting from the release of renin from the kidneys causing a vasoconstricting effect of the arteries further increasing the volume of blood (Hypertension, [Lippincott] 2022). These actions and structural changes cause an increase in peripheral vascular resistance, further leading to hypertension. Clinical manifestations might only be the elevated reading alone; however, a patient might experience symptoms such as “severe headaches, chest pain, dizziness, difficulty breathing, nausea, vomiting, blurred vision or other vision changes, anxiety, confusion, buzzing in the ears, nosebleeds, or abnormal heart rhythm” (Hypertension, [World Health Organization] 2023).

Hypertension is one of the most common health conditions in America. “Nearly half of adults in the United States (47%, or 116 million) have hypertension” (Facts About Hypertension, 2023). Further, “In 2020, more than 670,000 deaths in the United States had hypertension as a

primary or contributing cause” (Facts About Hypertension 2023). When considering the effectiveness of management, “Approximately 1 in 5 adults (21%) with hypertension have it under control” (Hypertension, [World Health Organization] 2023), a very alarming percentage. When hypertension goes untreated it can lead to life threatening complications such as heart failure, chronic kidney disease, stroke, coronary artery disease, and end organ damage. The nursing community is constantly caring for patients with hypertension, often poorly controlled. It is of great importance that nurses provide education regarding the condition itself, risk factors, complications, and prevention measures, to provide the best possible care. Without proper teaching, more and more of our patient population could be hospitalized for the serious, life-threatening complication, even more difficult to treat.

### **Risk Reduction/Treatment of the Problem**

Just like many other health conditions, hypertension has both modifiable and non-modifiable risk factors. As age increases, so does the risk for hypertension, making this a non-modifiable risk factor along with sex, ethnicity, and family history. Males and the black population have a higher risk (Hypertension, [Clinical Key] 2023). The most common modifiable risk factors are obesity, high sodium diet, smoking, alcohol consumption, stress, and a sedentary lifestyle (Hypertension, [Clinical Key] 2023). Many people will say that the best treatment for hypertension is prevention. Simple preventative measures include weight reduction, increased physical activity, and a healthy, low sodium diet. Evidence-based practice regarding the Dietary Approaches to Stop Hypertension, also known as the DASH diet, have been “studied in many clinical trials, and most of them have been associated with lowering blood pressure. Further, there is evidence to show that the DASH diet also lowers the risk of adverse cardiac events, stroke, type 2 diabetes, and obesity” (Challa et al., 2023). When considering exercise for

prevention, “regular aerobic exercise (at least 30 minutes per day most days of the week, for a total of 120 to 150 minutes per week), dynamic resistance exercise (90 to 150 minutes per week), and isometric resistance exercises are recommended (Hypertension, [Lippincott] 2022). Smoking cessation and reduction or complete elimination of alcohol consumption is also a preventative measure. Screening for hypertension is as simple as getting blood pressure taken at the doctor’s office. Annual monitoring of blood pressure is ideal for those ages 40 years or older and high-risk patients, (Hypertension, [Clinical Key] 2023) or more frequently if desired. Aside from weight loss, exercise, and dietary adjustments, the main treatment for hypertension is medication based. Two common options are thiazide diuretics and angiotensin receptor blockers. Diuretics increase urine flow to remove water and sodium from the body, this reduction of fluid leads to a decrease in blood pressure. Angiotensin receptor blockers, or “ARB’s” such as losartan or valsartan, block the vasoconstriction effect of angiotensin II, dilating the arteries to decrease blood pressure. Medication management requires compliance for desired effect to treat hypertension and decrease the risk of further complications associated with poor management. Lifestyle modifications in adjunct to medication regimen are highly encouraged for the best possible outcome in prevention and treatment. These changes can essentially eliminate the risk factors associated with hypertension.

### **Planning of Teaching Content**

The most beneficial learning outcomes for the community regarding the topic of hypertension is to identify and acknowledge personal risk factors associated with the condition and to understand the importance of adopting a lifestyle of preventative measures. When sharing this topic with the community, providing blood pressure readings would be a beneficial and informative activity to include. Having the patient be able to determine if their reading is normal,

elevated, or hypertensive, would be a great way to test their knowledge following the presentation. When presenting to a large group, it is important to make statements or ask questions that can be personalized as individuals begin to process what is being stated or asked. When personalization is added to a presentation regarding a health condition, it could be life changing for the learners. Taking a common topic and relating it directly to the lives of the listeners can spark the motivation of adopting a healthier life. Having equipment available such as manual and automatic blood pressure cuffs will be a nice visual for the listeners along with a tri-fold poster decorated and organized according to the main topics covered my groups presentation. Supplemental handouts such as pamphlets with key points or questionnaires would be another great resource for my group to provide for the community event. It would be nice to add some tips about exercise and even snack or meal recommendations to reference that align with prevention and treatment measures! It is important to me that I help express to the community that living a preventative lifestyle is not a loss, but the gaining of new knowledge and experiences.

### **Conclusion**

Hypertension will continue to impact the lives of people in the United States, day in and day out. Even within my first few months of being a nursing student in the clinical setting, I have been able to see first-hand how prevalent hypertension is and just how often it is poorly managed. Many people think to themselves “I’m fine” or “I don’t have to worry,” until they do. Becoming informed and knowledgeable about risk factors, screening, prevention measures, and management are significant ways to advocate for your health and wellbeing, along with lowering the risk of developing further, life-threatening complications. Be the “*wise person*” that Einstein describes and do it all to avoid the ongoing problem of hypertension.

## References

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