2016

Hypertension and African Americans: A Retrospective Review of Provider Education on Lifestyle Counseling and Medication Management

Danielle Bundrent
University of Kentucky, dbundrent83@gmail.com

Recommended Citation

Bundrent, Danielle, "Hypertension and African Americans: A Retrospective Review of Provider Education on Lifestyle Counseling and Medication Management" (2016). *DNP Projects*. 109.
https://uknowledge.uky.edu/dnp_etds/109

Final DNP Project

Hypertension and African Americans: A Retrospective Review of Provider Education on Lifestyle Counseling and Medication Management

Danielle Bundrent BSN, RN

University of Kentucky

College of Nursing

December 6, 2016

Sharon Lock, PhD- Committee Chair

Debra Hampton, PhD-Committer Member

Shirl Johnson, DNP- Committee Clinical Mentor

Dedication

My DNP Practice Improvement Project is dedicated to my lifelong commitment to serve my patients and community. I dedicate my motivation to my six year old daughter Se'Rae. You are a magnificent spirit and I love you dearly. I dedicate my inspiration and tenacity to my mother, Marilyn Warren because of you I know I can do anything! Above all, none of this would be possible without my Lord and Savior Jesus Christ.

Acknowledgements

I would like to acknowledge my advisor, Dr. Sharon Lock, committee member Dr. Debbie Hampton, and clinical mentor Dr. Shirl Johnson. I truly appreciate your time and devotion in helping me succeed.

I would like to thank the entire University of Kentucky College of Nursing, professors and staff. Your contribution to my future is limitless and incomparable. My deepest gratitude extends to Norton Healthcare for this incredible opportunity and priceless investment you have bestowed upon me.

Lastly, I want to acknowledge my family and friends that have come along this three year journey with me. I thank you and I love you all.

Table of Contents

List of Tables

Abstract

Purpose: The purpose of this study was to evaluate current provider practice of the management of hypertension among African Americans in a primary care clinic in Louisville, KY. Specific aims of the study were to: 1) assess provider adherence to the JNC 8 guidelines related to African Americans with hypertension and, 2) assess provider adherence to hypertension lifestyle education and counseling.

Methods: This descriptive study used a retrospective chart review to evaluate provider management of hypertension. Medical records of African American men and women in a primary care practice in Louisville, KY were reviewed. A random sample of 100 charts, 50 male and 50 female patients with a diagnosis of essential hypertension (ICD9: 401 or ICD10: I-10) who were seen in the office between January 1, 2015 and December 31, 2015, were reviewed.

Results: The majority of providers (60%) adhered to the JNC 8 guideline by prescribing calcium channel blockers, thiazide diuretics, and angiotensin-converting enzyme (ACE) inhibitors or angiotensin receptor blockers according to the guideline algorithm. Patients whose blood pressure readings were within normal range were more likely to have been prescribed JNC 8 adherent medications and received lifestyle counseling.

Conclusion: Practitioners that incorporate lifestyle counseling and JNC 8 adherence into their treatment of African Americans with hypertension are more likely to have patients with optimal blood pressure control.

Hypertension and African Americans: A Retrospective Review of Provider Education on Lifestyle Counseling and Medication Management

Introduction

The occurrence of hypertension has reached an estimated 50 million Americans with a two times greater prevalence for African Americans than whites (Moulton, 2009). Of individuals with hypertension, over half are 60 years or older, disproportionately affects African Americans and leads to morbidity and mortality (Still, Ferdinand, Ogedebe, & Wright, 2015). Hypertension is considered the “silent killer” because of the high morbidity for patients having a stroke, kidney disease, and heart disease secondary to undiagnosed or untreated hypertension. Of the African Americans who receive medical treatment for hypertension, only 58% obtain adequate blood pressure control (Migneault et al., 2012). The purpose of this project was to assess provider adherence to the JNC 8 Guideline and lifestyle counseling documentation related to African Americans with hypertension.

Background

According to the Centers for Disease Control and Prevention (CDC, 2015), 43% of African American males and 45.7% of African American females have been diagnosed with hypertension. The percentages of men and women with hypertension are similar for all individuals between the ages of 45 to 64. After the age of 64 a much higher percentage of women have hypertension than men (American Heart Association [AHA], 2014). A diet with a high intake of sodium, lack of physical activity, and a BMI between 25 and 30 are all risk factors that contribute to an increased prevalence of hypertension (AHA, 2014). The CDC estimates that 46 that billion dollars are spent each year on all patients with hypertension to cover their health care services, medications for blood pressure, and missed work days (CDC, 2015). In 2013 the state of Kentucky reported that 39.1% of the population self-reported being diagnosed with hypertension; however, this does not take into account patients who have not been diagnosed (Foundation for a Healthy Kentucky, 2013).

Hypertension is a complex disease; however, patients have the ability to modify certain factors. Although medication adherence is influential in high blood pressure control, patients should also consider diet modifications and modifying risk factors to decrease their blood pressure. Aerobic exercise, salt-restricted diet, dietary treatment for weight management and self-monitoring of blood pressure are associated with a significant reduction of approximately 3–8mmHg in systolic blood pressure among patients diagnosed with hypertension (Nolan, Liu, & Payne, 2014).

The Eighth Joint National Committee (JNC 8) Guidelines for the Management of Hypertension in Adults developed evidence statements and recommendations for hypertension for providers, especially those working in the primary care setting (James et al., 2014). The JNC 8 created nine recommendations, including special recommendations for diabetic patients as well as patients with chronic kidney disease (James et al., 2014). The guideline is designed for Non-African American patients 18 year and over and African Americans 18 years and over (See Appendix A for algorithm). According to the JNC 8, blood pressure goals are as follows: age 60 years or greater <150/90 mmHg, 60 years or less <140/90 mmHg, and diabetics with or without CKD with no age discrimination have a goal of <140/90 mmHg.

Abel et al. (2015) conducted a retrospective chart review on 323 African American patients. The inclusion criteria were patients 18 and over, diagnosed with hypertension, and on an antihypertensive agent. The researchers examined patients on thiazide diuretics only, calcium channel blockers only, thiazide diuretic and calcium channel blocker combination therapy, or other antihypertensive agents. The authors hypothesized that African American patients who were prescribed thiazides and calcium channel blockers as recommended by the JNC 8 algorithm would have better optimal blood pressure control and lower association of target organ damage as compared to African American patients who were on agents not recommended by the JNC 8. The findings showed that there was no statistically significant difference in blood pressure control among antihypertensive agents. All patients on some variation of therapy were controlled on their medication. Also, there was no association of specific antihypertensive agents decreasing target organ damage. The authors concluded that being controlled on any antihypertensive agent is equally effective at decreasing arteriosclerotic cardiovascular disease risk factors.

The goal of the guideline is to assist the health care provider in identifying the appropriate management of hypertension in order to increase the percentage of patients with controlled blood pressure. Uncontrolled hypertension has an effect on high risk populations with increased morbidity and mortality. In addition, uncontrolled hypertension is associated with increased healthcare spending. To improve outcomes, there is a strong need to implement programs aiming to raise awareness of providers regarding the benefits of guidelines implementation (Theodorou et al., 2012).

Purpose

The purpose of this study was to examine the current provider practices of the management of hypertension in African Americans in a primary care clinic. The specific objectives were as follows:

a. Assess provider adherence to the JNC 8 guidelines related to African Americans with hypertension as outlined in attached algorithm.
b. Assess provider adherence to hypertension lifestyle education and counseling.

Methods

Design

A retrospective chart review was used to evaluate provider management of hypertension in African Americans in a primary care setting. A random sample of 100 charts, 50 male and 50 female patients with a diagnosis of essential hypertension (ICD9: 401 or ICD10: I-10) who were seen in the office between January 1, 2015 and December 31, 2015, were reviewed. Study permission was granted by Norton Healthcare Office of Research Administration (NHORA) and the University of Kentucky Institutional Review Board (IRB).

Study Procedures

The randomly selected medical records that met the inclusion criteria were numbered and coded into an Excel spreadsheet. The following data were collected: age, race, other patient diagnoses such as diabetes or kidney disease, medications, provider education documentation, and blood pressure measurements for each patient visit during the study period. Charts were reviewed in a workroom in the primary care office. Only the principle investigator was in the room while the charts are being reviewed.

Data Analysis

Descriptive statistics, including means and standard deviations as well as frequency distributions, were used to summarize the sample. Bivariate analysis was used to test for differences in outcomes (lifestyle counseling and adherence to guideline) by demographic and clinical variables. T-tests were used for continuous variables (age), chi-square tests of association and fisher's exact tests were used for categorical variables. Data analysis was conducted using SPSS, version 23. An alpha of .05 was used to determine statistical significance.

Results

Sample Characteristics

The participant sample consisted of 100 randomly analyzed charts of African Americans. The mean age for males (n=50) was 60, and the mean age for females was (n=50) 65. The majority of patients (57%) had a diagnosis of essential hypertension (HTN). Only 34% of participants had a diagnosis of HTN and Type 2 Diabetes Mellitus (T2DM), 4% had a diagnosis of essential hypertension and chronic kidney disease (CKD), and 5% had a diagnosis of HTN, T2DM, and CKD (See Table 1).

JNC 8 and Lifestyle Counseling

The majority of patients (60%) were prescribed medications which were adherent to the JNC 8 guideline such as calcium channel blockers, thiazide diuretics, ACE inhibitors or Angiotensin receptor blockers according to the guideline algorithm (See Appendix A). Patients who were 60 years old or younger with blood pressure readings within normal range had a mean systolic blood pressure of 130 mmHg and mean diastolic blood pressure of 83 mmHg. The mean blood pressure for participants 60 years or older that had blood pressures in range was 137.90 mmHg systolic and 77.6 mmHg diastolic (See Table 2). Overall, patients with JNC 8 adherence had blood pressure reading in normal range 90% of the time.

Only 39% of patients diagnosed with HTN received lifestyle counseling. Of those who received lifestyle education and counseling 84.6% had blood pressures readings within normal range (See Table 3). Almost half (45%) of the sample were not prescribed medications adherent to the JNC 8 and 29.5 % of sample did not receive lifestyle counseling; as a result, the blood pressures were out of range. Chi-square tests revealed there were no statistically significant differences in provider adherence to JNC8 or lifestyle counseling by gender or age. Patients whose blood pressure readings were within normal range were more likely to be JNC 8 adherent and receive lifestyle counseling.

Discussion

This study and statistical analysis provide strong evidence that adhering to the JNC 8 guideline and providing lifestyle counseling is beneficial in maintaining optimal blood pressures. Patients in this study who were treated according to the JNC 8 guideline and received lifestyle counseling were more likely to have blood pressures within normal range. The findings of this study are similar to Abel et al.'s (2015) study in that patients who were prescribed antihypertensive medications according to JNC 8 guidelines had blood pressures within normal range. This study showed that 84.6% of patients that received lifestyle counseling, and 90% of patients with medication prescribed according to the JNC 8 guideline had blood pressures in range. Therefore, practitioners that incorporate lifestyle counseling and JNC 8 adherence into their treatment of African Americans with hypertension are more likely to have patients with optimal blood pressure control.

Limitations

Study limitations include a sample size of (N=100) 50 women and 50 men. The small sample size contributed to the lack of statistical significance between independent and dependent variables. There was not an even mix of hypertension and co-morbidities to accurately access adherence and counseling within the various diagnoses. Provider clinical experience was not assessed which may have given more insight on treatment approach. This study was limited to one primary care clinic; therefore these findings cannot be generalized to a larger population.

Implications for Further Study

Additional evaluation to determine provider perceptions of evidence based practices and the impact on patient outcomes would provide a broader understanding of provider treatment plans. In the future, researchers may assess patients' diet management as well as medication management that would be tracked by nurse navigators to help engage patient accountability.

Implications for Practice

This study shows that 45% of patients were not prescribed medications adherent to the JNC 8 and 29.5% of patients were not provided lifestyle counseling therefore; subsequently their blood pressures were out of range. Making the JNC 8 algorithm available in the electronic medical record for providers to seamlessly access during the prescribing process may foster a culture of guideline adherence. Furthermore, utilizing of nurse navigators to reinforce lifestyle counseling and medication adherence may assist with disease management for patients with hypertension.

Conclusion

This retrospective chart review provided information about provider adherence to the JNC 8 guideline and lifestyle counseling provided to African American with hypertension. Findings suggest that adhering to the guideline and having lifestyle counseling resulted in a higher percentage of blood pressures in an optimal range for the patients' age and diagnosis. This study identified interventions that lead to optimal blood pressures; however, the data suggests there are gaps in clinical practice. Future studies to evaluate the role of nurse navigators to monitor and provide additional education to patients with uncontrolled hypertension needs to be done. Additionally, educating providers on current lifestyle counseling and guideline recommendations may help facilitate optimal blood pressures. While this study provides a preliminary look into hypertension management, further research is needed to properly examine the problem.

References

Abel, N., Contino, K., Jain, N., Grewal, N., Grand, E., Hagans, I., Roy, S. (2015, October). Eight joint national committee (JNC 8) guidelines and the outpatient management of hypertension in the African-American population. *The North American Journal of Medical Sciences,* 10 (7), 438-445.

American Heart Association. (2014). Understanding your risk for high blood pressure. Retrieved from: http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/UnderstandYourRiskforHighBloodPressure/Understand-Your-Risk-for-High-Blood-Pressure_UCM_002052_Article.jsp#.Vug2xrdRHAU

Centers for Disease Control and Prevention. (2015). High blood pressure facts-Hypertension 2013. Retrieved from http://www.cdc.gov/bloodpressure/facts.htm.

Foundation for a Healthy Kentucky. (2013). Prevalence of hypertension (percent adults). Retrieved from: http://www.kentuckyhealthfacts.org/data/topic/map.aspx?ind=68656v

James P., Oparil S., Carter BL., Cushman, W. C., Dennison-Himmelfarb, C., Handler, J.,…Ortiz, E. (2014) .Evidence-based guideline for the management of high blood Pressure in adults: report from the panel members appointed to the eighth joint national committee (JNC 8). *JAMA*, k311(5):507-520. doi:10.1001/jama.2013.284427

Migneault, J. P., Dedier, J. J., Wright, J. A., Heeren, T., Campbell, M. K., Morisky, D. E., & Friedman, R. H. (2012). A culturally adapted telecommunications system to improve physical activity, diet quality, and medication adherence among hypertensive African Americans: A randomized control trial. *The Society of Behavioral Medicine*, 43.

Moulton, S. A. (2009). Hypertension in African Americans and its' related chronic diseases. *Journal of Cultural Diversity*, 16(4), 165-170.

Nolan R., Liu S., Payne A., (2014). E-counseling as an emerging preventative strategy for hypertension. *Current Opinion in Cardiology,* 29(4): 319-323.

Still C.H., Ferdinand K.C., Ogedebe G., & Wright J.T., (2015). Recognition and management of hypertension in older persons: Focus on African Americans. *Journal of the American Geriatrics Society,* 63 (10) 2130-2138

Theodorou M., Stafylas P., Kourlaba G., Kaitelidou D., Maniadakis N., Papademetriou V., (2012). Physicians' perceptions and adherence to guidelines for the management of hypertension: A national, multicentre, prospective study. International Journal of Hypertension, 1-11. http:// doi:10.1155/2012/503821

Trust for America's Health. (2016). Key health data about Kentucky-Hypertension-2013. Retrieved from http://healthyamericans.org/states/?stateid=KY#section=1,year=2015,code=hypertension

Table 1

Characteristics of Study Sample by Diagnosis (N=100)

Diagnosis	n (%)
Essential Hypertension (HTN)	57(57%)
HTN and Type 2 Diabetes Mellitus (T2DM)	34(34%)
HTN and Chronic Kidney Disease (CKD)	4(4%)
HTN, T2DM and CKD	5(5%)

Table 2

Mean Blood Pressure with Age and Diagnosis (N=100)

	Mean Systolic	Mean Diastolic
≤ 60 years	130.0	83.0
≥ 60 years	137.90	77.6
All ages with HTN, DM, No CKD	136.0	78.3
All ages with HTN, CKD, with or w/o DM	147.0	81.5

Table 3

Blood Pressure Ranges with JNC 8 and Lifestyle Counseling (n= %)

Variable	in Range	Out of Range
JNC 8 Adherence	90%	10%
Non Adherent JNC 8	55%	45%
Lifestyle Counseling	84.6%	15.4%
No Lifestyle Counseling	70.5%	29.5%

Table 4

JNC 8 Adherence with Diagnosis

Diagnosis	(n= %)
HTN	63.3%
HTN & T2DM	18%
HTN & CKD	0%
HTN, CKD, & T2DM	6.7%

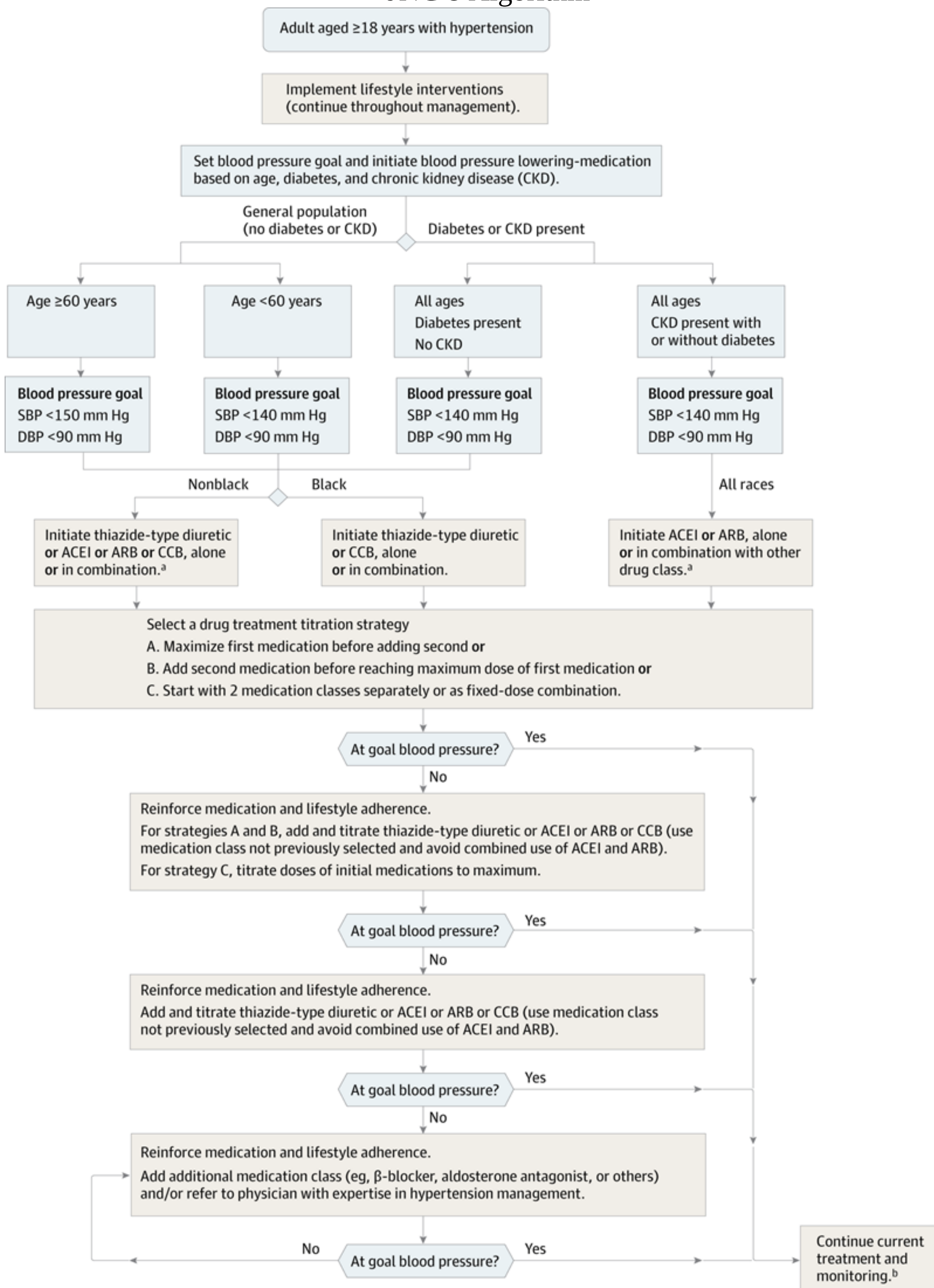
Table 5

Lifestyle Counseling with Diagnosis

Diagnosis	n (%)
HTN	71.8%
HTN & T2DM	20.5%
HTN & CKD	5.1%
HTN, CKD, & T2DM	2.6%

Appendix

JNC 8 Algorithm



Source: James P., Oparil S., Carter BL., Cushman, W. C., Dennison-Himmelfarb, C., Handler, J.,…Ortiz, E. (2014) .Evidence-based guideline for the management of high blood

Pressure in adults: report from the panel members appointed to the eighth joint national committee (JNC 8). *JAMA*, k311(5):507-520. doi:10.1001/jama.2013.284427