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Managing Hypertension with Lifestyle Modifications

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Managing Hypertension with Lifestyle Changes

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by

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Contents

Acknowledgements

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Executive Summary

Cardiovascular disease affects African Americans (AA) more than any other people in the population, including my family. My Capstone benchmark project is to reduce hypertension with lifestyle changes, education, and anti-hypertensive medication in AA males. This project began with my evidence-based PICOT Question: In African American males diagnosed with hypertension (P), how does the use of betablockers (I) compared to lifestyle changes (C) affect blood pressure control (O) over 30 days (T)?

Cardiovascular disease have taken the lives of millions of Americans, specifically, African Americans who do not have access to health care, which leads to morbidity and increased mortality. This benchmark project proposes to provide cardiovascular educational packets to patients who are admitted to the hospital and have been diagnosed with hypertension. The contents of the educational packets will provide education on lifestyle changes, including weight reduction, blood pressure monitoring with routine provider visits, healthy eating habits, medication management, and physical activity. The length of this project is 30 days.

In summary the cost/benefit of this project will be beneficial in terms of hospital admits related to cardiovascular complications. As a means of evaluation, I plan to do post hospital discharge calls to ensure patient understands his or her discharge plan.

Implementation and Benchmark Project

Rationale for the Project

Hypertension is a global health concern that is a costly expense not only for the patient being treated but for the healthcare system. African American males face multiple barriers in health care as it relates to hypertension. Some barriers include medication adherence, lack of knowledge regarding disease progression and not feeling supported by the health care provider (Bardach & Schoenberg, 2018) contributes to uncontrolled hypertension. African Americans have a mistrust of healthcare professionals which stems from past history of inequitable treatment, health providers can build trust by providing patient-centered care where each patient will have individualized care (Cuevas, O'Brien, & Saha, 2019). This capstone project focuses on a select population to reduce disparity in hypertension related hospital admits. By providing education while in the hospital on blood pressure medications and the importance of compliance will assist in better patient outcomes. Health care providers have an obligation to support and educate their hypertensive patients to decrease mortality rates from this chronic disease.

The literature for this project will show how lifestyles changes in addition to medication regimen will improve patient mortality and morbidity outcomes

Literature Synthesis

The review of literature consists of six studies one controlled cohort study, three qualitative, one systematic review, and one random control trial (RCT). All of studies answered and supports the clinical question. The appraised studies support the evidence that lifestyle modifications with medication adherence can assist African American males in reducing blood pressure and be more complaint in treatment plans.

The qualitative evidence strongly suggests that providers should ask probing questions to gauge patient perception of his or her knowledge of hypertension to be able to understand what the patient needs to be successful. Patient perception on how they view hypertension is an important piece to patient-centered care. Patients reported a number of reasons why their treatment plan was not successful like running out of medications, inability to refill prescription due to lack of finances or unable to get off work, and they felt medication was not working. Fontil et al. cohort study (2018) used an intervention that Kaiser Permanente health system developed, an evidence-based treatment protocol for individuals diagnosed with hypertension. This treatment protocol used 4 elements individuals with hypertension were placed on a registry, they used combination antihypertensive with diuretics, a registered nurse and pharmacist, and they used a standardized blood pressure measurement protocol, which showed a positive effect on lowering blood pressure.

In a meta-analysis, evidence supported lifestyle modifications (LSM) to lower blood pressure readings. LSM include eating a healthy diet, exercising at least four times per week, moderate consumption in alcohol intake, and reduction of sodium and potassium intake.

In the RCT, a cost effectiveness analysis was conducted to evaluate patients with elevated blood pressure willingness to pay (WTP) or willing to accept (WTA). This study assessed how patients value their time in caring for themselves (medical appointments, childcare, and travel expenses). The evidence suggested patients place different monetary amounts on healthcare. If patient does not find that it cost effective or beneficial to drive further to an appointment, he or she will not receive the treatment that is needed.

Project Stakeholders

The stakeholders in this project include the patients and their families, primary care nurses, physicians, pharmacists, and case management workers. Each stakeholder has a vested interest in receiving or giving above standard care to decrease time loss from work and missing out on family time.

Implementation Plan

To implement a hypertension protocol, patients with family history and currently diagnosed with hypertension would be given additional information regarding lifestyle changes or modifications, a medication review with a pharmacist, and a detailed review of social history to determine if there are social determinants that need to be addressed that would hinder the treatment plan. While in the hospital, patients are taught how to take and record blood pressure results, parameters for notifying primary care providers on high blood pressure trends (or low blood pressure), how to modify eating habits, how to get more exercise or start exercising, and managing weight control (lifestyle modifications). Upon discharge, patients will be scheduled a follow-up appointment with their provider and be given prescriptions, ideally, the new script should be enough to last until their follow up appointment. Post-discharge, a nurse should do a discharge call to follow up on any questions that need to be answered.

The change project will be carried out in the acute care hospital at Dallas Medical Center (DMC) on the medical surgical unit. In order to build a case that this project is needed, data on hypertension admissions with a cost analysis for inpatient treatment versus clinic visit. The stakeholders are the unit floor nurses, clinical pharmacist, the primary care doctor as well as the cardiologist. Opportunities for interprofessional involvement will include the stroke coordinator and the clinical educator. They can assist with hypertension literature and posting reminders for staff to educate patients on the importance of blood pressure management, respectively. The clinical educator will assign HealthStream modules to medical surgical nurses, initially and annually.

The project will be submitted to chief nursing officer (CNO), and director of medical-surgical (DNS) for approval. The gatekeepers of this project change are the medical-surgical charge nurses. For this change project our allies will be the stroke coordinator as well as the cardiologist, each has a vested interest in helping patients. Barriers that may come up for this project is resistance from the primary nurses due to the increase in workload and due to the lack of knowledge on implementing evidence-based change. Hockenberry, Brown, and Rodgers (2015) confirms that a nurse lack of knowledge on how to implement evidence-based practice could be a potential barrier (p.206). This change project can be carried out by primary nurses and the pharmacist. The primary nurse is responsible for educating and handing out the literature (on admission) and the pharmacist to provide medication education upon discharge.

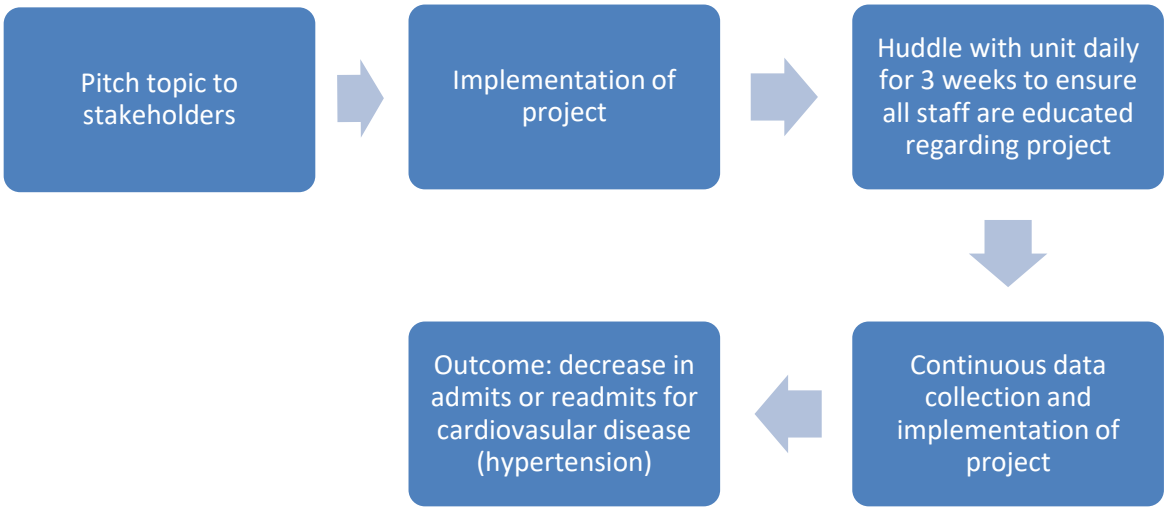
The resources for this proposed change project include brochures with hypertension education. We will need unit registered nurses (RNs) to identify and provide education to the hypertensive patient (cardiovascular information sheet). In addition RNs will need to have ongoing HealthStream modules (education software). The organization cost for this project are

the additional literature for hypertension education which includes printing and the additional HealthStream assignments. The cost of funding this project compared to admitting a hypertensive patient is far less in comparison.

Timetable/Flowchart (projected time frame 14 weeks from start to finish)

Major steps	**Specific Timeline**
Outline project to CNO and DNS	Weeks 1-2
Pitch project to stakeholders and plan education module with clinical educator and stroke coordinator	Week 3-4
Pitch new consent forms with CMO, cardiologist, and stroke coordinator Assemble team members; assign task to team members based on skill set	Week 3-6
Update outline of project staff to ensure education is completed and literature is available for patients	Week 6-7
Meet with team members to monitor progress of project, and make changes based on feedback from team meeting Assign post discharge call back Start change project	Weeks 7-9
Final team meeting to discuss evaluation and assess data and adjust project as needed and update stakeholders on information. Continue to monitor project, and collect data	Weeks 9-14

Flowchart



Data Collection Methods

At the start of this project a query report was ran using key words: patient demographics, hypertension diagnosis, discharge disposition, and specific dates August- October. The data was collected using sequel viewpoint. The data revealed that the during this specified time, there was only one readmit for hypertension. Between weeks 7-9, post discharge call backs should take place and data collected from that encounter should be inputted into a spreadsheet. This will allow for convenient assess to see if the additional education documents assisted the patient when he or she discharged from the hospital.

Cost/Benefit Discussion

Due to the cost that cardiovascular disease have on the economy it behooves health care organizations to invest in programs or unit specific evidence-based measures to improve outcomes for this disease population. There should be no additional cost to the organization, it is a matter of using the materials and the software that is already being used to provide education to the staff.

Discussion of Results

When this journey began to decrease the admits or readmits for hypertension, there was not a system in place to teach patients on how to manage a chronic disease. Since then, changes have been made in terms of how nurses educate patients at initial visit and discharge. It was recognized that when nurses give detailed information at time of discharge, some of that information is forgotten when patients arrive home. Now at the time of admission patients are given a medication list which also notes the side effects. Nurses use this tool as a visual aide to remind patients that they are taking, for example, blood pressure medication.

When the query report was compiled, the results were amazing! It turned out that there was only one readmit for hypertension in the span of thirty days. Which means that patients are retaining information given at discharge.

Conclusions/Recommendations

As a nurse, it is imperative to determine what brought the patient to the hospital and how we can limit their hospital stay. Having all the information for the patient can assist in discharge planning. During discharge nurses can advocate for needed medications that are affordable, convenient, and enough medication that will allow patient to arrange for a follow up appointment with their primary provider.

In conclusion, in addition to the current call back discharge sheet, would recommend adding a question about making a follow up appointment with their primary care provider.

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Appendix

Post Discharge Call-Back

Patient name:

Date of discharge:

Diagnosis:

Hello, _____, my name is _____, I am just calling to see how you are recovering at home and to check if you have any questions.

May I ask you some questions while I have you on the line?

1. Have you had a chance to make a follow up appointment with your primary care provider?
   (If patient say no then offer to call and set it up for them. If they say yes, then take down that information so that you can do another follow up call.)
2. How are you blood pressures running since you been home?
3. Are you having any side effects from the medications that were prescribed?
4. Do you have resources to get your medications?

At the end of the conversation, thank patient for their time.

Appendix A

Synthesis Table

Citation: (i.e., author(s), date of publication, & title)	Conceptual Framework	Design/ Method	Sample/ Setting	Major Variables Studied and Their Definitions	Measurement of Major Variables	Data Analysis	Study Findings	Strength of the Evidence (i.e., level of evidence + quality [study strengths and weaknesses])
Author, Year, Title	**Theoretical basis for study Qualitative Tradition**		**Number, Characteristics, Attrition rate & why?**	**Independent variables (e.g., IV1 = IV2 =)** **Dependent variables (e.g., DV =)** **Do not need to put IV & DV in Legend**	**What scales were used to measure the outcome variables (e.g., name of scale, author, reliability info [e.g., Cronbach alphas])**	**What stats were used to answer the clinical question (i.e., all stats do not need to be put into the table)**	**Statistical findings or qualitative findings (i.e., for every statistical test you have in the data analysis column, you should have a finding)**	• **Strengths and limitations of the study** • **Risk or harm if study intervention or findings implemented** • **Feasibility of use in your practice** • **Remember: level of evidence (See PICOT handout) + quality of evidence = strength of evidence & confidence to act** • **Use the USPSTF grading schema http://www.ahrq.gov/clinic/3rduspstf/ratings.htm**
Staffileno et al (2018). Favorable outcomes using an eHealth approach to promote physical activity and nutrition among young African American women	Cognitive Self-directed behavior Motivational coaching	CCT	*N*=26 AA women 18-45 years old w/untreated HTN Access to web Attrition= bias due to self-reporting	IV= promoting physical activity and nutrition using ehealth approach DV=the effects of pre-HTN	Omrom dig BP monitor BMI Weight (health O meter) Height- stadiometer DASH screener Pedometers Tracking engagement	*t*-tests linear models sign test paired *t* test	"BP,weight or BMI (p>.05)", Staffileno,2018, p.66) DASH score 1.68 Pedometer p=0.55 Program comp=058	Strengths/limitations= sample size, self-reporting used for walking, only one gender, time frame, unknown time frame for web modules and investigator Risk or harm= none noted Feasibility= not enough data Level of evidence= Level II Grading schema= grade B
Onwukwe, SC et al (2012). Drug therapy, lifestyle modification and blood pressure control in a primary care facility, south of Johannesburg,South Africa: an audit of hypertension management	None stated	RS	300 hypertensive patients CHC, south of Johannesburg, South Africa 18years and older Co-morbs LSM	IV= DT and LSM DV= BP control	Chi-square Fisher's exact test	DS	BB to cauc more than AF CCB to AF more than cauc 57% controlled BP 81.3% receiving correct BP medication 56.3% of HTN pt did LSM	Strength- shows that females with HTN are more complaint with DT and LSM Limitation- not enough data collected for LSM only 169 patients Risk or harm- none noted Feasibility- can be used in clinical practice however, 56.3% did LSM (low amount) Level of evidence: Level IV, grade C

			Attrition rate= none					
Magobe, N.B.D., Poggenpoel, M., & Myburgy, C. (2017). Experiences of patients with hypertension at primary health care in facilities own lifestyle change of regular physical exercise.	Self-efficacy (Bandura, 1997)	Q dDS QQual	44 HTN PHC dx in 1- 10 years ormore. Three PHC in Sowato, South Africa	IV= regular physical exercise DV= effect on blood pressure	Focused groups Researchers conducted group and individual interviews asking about their lifestyle: PA	Tesch's open coded method	Themes: self-care is a challenge poor self- efficacy for PA	Limitation- self reporting via interviewing, sample size not adequate, study does not report interventions that participants have done prior (if any), only reported themes that supported article Risk or harm- none noted Feasibility- can be used with patients with stage I HTN Level of evidence: Level VI Grading schema: grade B Level of certainty: Moderate
Kes. (2019). Predictors of blood pressure control and medication adherence among primary hypertensive patients.	Health promotion Model (HPM)	cross-sectional study	231 HTN patient that were registered at a family health center in north-west Turkey	IV= diet, physical activity, systolic and diastolic blood pressure, income level and work status DV= medication adherence	Self-reporting scale that consisted of 13 statement asking about factors that may affect regular use of antihypertensives (Kes, 2019, p.485)	Multiple logistic regression model	Factors that contribute to BP control: edu, PA, diet, and number of medications Factors that contribute to med compliance: diet, PA, income, working status, and BP	Strength- study can appeal to individuals with some edu Limitation- study was done with self-reporting methods, small sample size Risk or harm- none noted Feasibility- Can use this study for those patients that want to see how taking antihypertensives along with other factors can control blood pressure Level of evidence: Level IV, grade B

Bardach et al., (2018), The role of primary care providers in encouraging older patients to change their lifestyle behaviors	None stated	Qual	N=104, 65 to 95 years old Marital status Education Financial status Race	IV= patient perceptions DV= lifestyle behaviors	Constant comparison approach Code book created	Semi-structed interviews	Themes: relationships matter, addresses concerns and encouragement offered, providers lack of communication	Strength: themes make a point for provider Risk or harm: no noted Feasibility: can use in practice Level of evidence: V Grading schema:
Ferdinand et al., (2020), Hypertension in African Americans: Advances in community outreach and public health approaches	None stated	RS	New Orleans	IV= outreach programs DV=decrease in blood pressure	Dallas and Los Angeles models	ACC/AHA NH/NES	Disparities are a factor in treating HTN in AF communities	Strength: supports clinical question Risk or harm: none noted Feasibility: can use in practice Level of evidence: IV Grading schema: B
Fontil et al., (2018), Adapting and evaluating a health system intervention from Kaiser Permanente to improve hypertension management and control in a large network of safety-net clinics	None stated	Cohort – Post interventi on time series	N=15617 20 to 84 years old 12 safety-net clinics in Northern CA Demographics Medical hx BP	IV= Kaiser Permanente evidence-treatment protocol DV= reduction in BP	EBG AHA ACC	Multivariabl e Logistic regression X^2 Cochran Armitage	BP was improved in 24 months	Strength: answers the clinical question both modalities will lower blood pressure under monitoring Risk or harm: none noted Feasibility: can use in practice Level of evidence: IV Grading schema:

Gleason-Comstock et al., (2017), Willingness to pay and willingness to accept in a patient-centered blood pressure control study	None stated	RCT(AchieveBP)	N=38 Detroit, MI (Detroit Medical Center clinical research office) Gender Education Employment status Marital status Insurance status	IV= patient willingness DV=decrease in blood pressure	No scales used	IBM SPSS statistic, version 22.0-analyze data Linear regression analysis	50% no insurance 55.9% no PCP 78.9% HS edu or higher 44.7% employed	Strength: supports clinical question Risk or harm: none noted Limitations: sample size, survey based on patient perceptions could biased Feasibility: cannot be used in a clinic setting Level of evidence: II Grading schema: A
Ozemek et al., (2020), Impact of therapeutic lifestyle changes in resistant hypertension	None stated	RS	Chicago, IL Weight loss Healthy diet Reducation in Na and K PA Moderation in ETOH	IV= weight loss, healthy diet, Na and K intake, PA, ETOH consumption DV= hypertension management via LSM	No scales were used	TRIUMPH PATHWAY-2	LSM promising strategies to management BP	Strength: answers clinical question Risk or harm: none noted Feasibility: can be used in practice Level of evidence: IV Grading schema:
Pettey et al. (2016). African Americans' perception to adherence to medications and lifestyle changes prescribed to treat hypertension.	Health Belief Model	QS	N=29 (26) Faith-based, PC clinic in Arkansas, uninsured, indigent Ages 21-64 Dx HTN and taking BP meds	IV=AA perceptions to med adherence and LSC to treat HTN DV= BP treatment compliance	Content analysis Coding interviews	Central tendency Variation Ethnograph-interview	Participants understood causes of HTN and understand med compliance and LSM can reduce elevated BP	Strengths: supports clinical question Limitations: missing data from 3 charts, small sample size (26), 1- faith based clinic, non-randomized Risk or harm: none noted Feasibility: can be used in practice- to gain insight on what patient knows about HTN Level of evidence: IV

			MS Edu Length of HTN tx					Grading schema: B
Aycock et al. (2015). Family Hx of Stroke among African Americans and its association with risk factors, knowledge, perceptions, and exercise		Cross-sectional comparative QS	Nonrandom participants from a free mobile clinic in Alabama (Black belt region) Ages 19-54 Able to read, write or understand English	IV= African Americans familyhx DV= increase in knowledge on risk factors associated with stroke	American Stroke Association risk scale National stroke association risk scorecard Champion Health Belief Model scale Risk perception survey Modified Godin Leisure time exercise	Nonparametric t-tests x^2 analysis	Fx hx of stroke 58%, grandparent 33%, sibling 9% Ages 19-54:SD of 43.3 (9.4) years Risk factors: Exercise: 76% Obesity:59% Hx of HTN: 53% Smoke: 38%	Strengths: supports clinical question Limitations: small sample size Risk/harm: Feasibility: providers can use to encourage young adults to know family hx to assess potential risk factors Level of evidence: IV Grade: B

Legend:

ABSHS= Australian Bureau of Statistics health survey

ACC= American College of Cardiology

ACE inhib = angiotensin-converting enzyme inhibitors

AHA= American Heart Association

BB= beta blockers

Cauc= Caucasian

CCB= calcium channel blockers

CHC= community health center

Co-morbs= co-morbidities

Conven= conventional

DS= descriptive study

DT= drug therapy

Dx=diagnosis

Edu= education

ETOH= alcohol

EBG= Evidence-based guideline for management of high blood pressure in adults

FX HX=family history

GP= general practice

HB= Hill-Bone compliance survey

HS= high school

HTN= hypertension

Ind=independent

K= potassium

LSM= lifestyle modifications

LS RF= lifestyle risk factors

MV= multivariate

Na= sodium

PATHWAY-2= prevention and treatment of hypertension with algorithm-based therapy-2

PHC= primary health clinic

RCT= random control trial

RS= retrospective review

Qual=qualitative

TRIUMPH= Lifestyle interventions in treatment resistant hypertension