

Implementation of Dietary Approaches to Stop Hypertension Diet Educational Protocol in a
Primary Clinic Setting - A Quality Improvement Project

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DNP 767 In partial fulfillment of the requirements for the Doctor of
Nursing Practice

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September 22, 2021

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Abstract

This quality improvement project aimed to determine if the implementation of a Dietary Approach to Stop Hypertension diet educational protocol would increase participant knowledge regarding the importance of the DASH diet for blood pressure (BP) control of patients in a primary care setting. Pre- and post-education questionnaires were used to determine the efficacy of the provided educational session regarding the protocol. The results showed the nine participants gained an increase in knowledge of the DASH diet protocol, relating to BP control of their eligible hypertensive patients. Following the educational session and project implementation, healthcare provider compliance to patient education was also evaluated. The healthcare providers were 100 % compliant providing patient education after project implementation. A major limitation of this project was the time frame. Patients were unable to follow up in the clinic after one month due to Covid-19 so it was not known if the BP did decrease.

Implementation of Dietary Approaches to Stop Hypertension (DASH) Diet Educational Protocol in a Primary Clinic Setting - A Quality Improvement Project

Hypertension (HTN), or elevated blood pressure (BP), is a major risk factor for heart disease and stroke and is the fifth-leading cause of common chronic diseases among patients in the United States (America's Health Rankings [AHR], n. d.). HTN progressively damages the walls of small and large arteries and makes the heart work harder to get the blood pumped through the body (John Hopkins University, n. d.). There were 82,735 deaths in 2016 related to high BP (AHR, n. d.) highlighting that hypertensive adults must have a clear, detailed, and evidence-based plan of care to reduce BP (Whelton et al., 2018). In 2020, the National Heart, Lung, and Blood Institute ([NIH/ NHLBI]) defined a healthy BP as less than 120/80 mm Hg.

One way to manage high BP is by using the Dietary Approaches to Stop Hypertension (DASH) developed by the NHLBI (Mayo Clinic, 2019). The diet is low in fats with emphasis on fruits and vegetables.

The NHLBI has sponsored studies on the DASH diet showing it is a healthy way of eating due to the reduced sodium in the diet. It encourages consumption of foods rich in nutrients such as potassium, calcium, and magnesium that can help lower BP (Mayo Clinic, 2019). The DASH diet has other health benefits besides lowering the BP and may prevent other diseases such as osteoporosis, cancer, diabetes, and heart disease (Mayo Clinic, 2019).

Background

HTN, if uncontrolled, may lead to heart disease, stroke, renal damage, vision problems, sexual dysfunction or heart attack (American Heart Association [AHA], n. d.). Unfortunately, it often has no signs or symptoms making it difficult to detect right away. However, once diagnosed, HTN can be controlled through a combination of diet, exercise, and medication. The

American Medical Association (AMA, 2015) has evidence-based protocols for the management of HTN which includes early follow-up and medication, including the addition of preferred medications in a stepwise fashion until BP is controlled along with lifestyle modifications.

The DASH diet is a well-researched lifestyle modification developed to lower BP (Mayo Clinic, 2019). The DASH diet has been shown to lower the BP several points in two weeks and the longer it is used, the systolic blood pressure (SBP) may lower by eight to fourteen points (Mayo Clinic, 2019). Patients utilizing the DASH diet have improved quality of life upon having a well-maintained BP (Rifai et al., 2015). The DASH diet, which is low in sodium, saturated and total fat with additional grains, fruits, and vegetables, may decrease the systolic blood pressure (SBP) by as much as 11 mm Hg (Whelton et al., 2018). In addition, the adoption of the DASH diet can result in significant BP reduction in adults both with and without HTN; higher daily sodium intake and younger age enhanced DASH's BP lowering effect (Filippou et al., 2020).

One of the first studies correlating DASH diet and lower BP was done by Appel in 1997. The same study also demonstrated sodium reduction significantly impacted the BP independently of the DASH diet. Low sodium intake, along with the DASH diet, was associated with lower SBP (Juraschek et al., 2017). The Centers for Disease Control (CDC, 2020) suggest that reduction of sodium intake to less than 2,300 mg per day could reduce the cases of HTN in 11 million people annually and save the health care system \$18 billion.

The DASH diet recommendations are widely accepted and recognized in the prevention and management of high BP (Siervo et al., 2015). Despite evidence-based practice (EBP) for the management of HTN using DASH, most patients do not meet the required goals of BP control for the disease due to noncompliance or lack of knowledge (Kim et al., 2016). Implementing a

DASH diet educational protocol could reduce BP among patients in the identified primary care setting.

Problem Statement

The DASH diet is widely recommended but not implemented in hypertensive patients at the identified primary care setting. Low referral of DASH diet can be due to lack of physician knowledge, lack of patient awareness of DASH diet, and the absence of systematic referrals (Won, 2015). After dietitians spoke with physicians regarding the DASH diet, there was a 46 % increase in referrals in six months that was attributed to physician awareness of the evidence-based benefits of the DASH diet which increased their confidence to recommend it to their hypertensive patients (Won, 2015).

This Doctor of Nursing Practice (DNP) project proposes to implement a DASH diet educational protocol in the primary care setting in an effort to improve provider teaching and interventions related to DASH diet in hypertensive patients.

Purpose Statement

The purpose of this DNP project is to educate the clinic staff and healthcare providers on the importance of the DASH diet in HTN management and to implement an effective protocol in the primary care setting. Patients will be screened and given information on the DASH diet.

Project Question

In hypertensive patients aged 30-65 receiving care at a primary care clinic, does the implementation of an evidence-based DASH diet educational protocol, compared to current practice, improve clinic staff and healthcare provider knowledge regarding the importance of the DASH diet in HTN management in a four-week time frame?

Search Methods

A literature review focused on the implementation of a DASH diet educational protocol was conducted at the Touro University Nevada Library. The search engines used were Cumulative Index of Nursing and Allied Health Literature (CINAHL), PubMed, Embase, ProQuest One Academic, and Nursing @OVID. Google Scholar was utilized to gather statistical information from the AHA, Centers for Disease Control (CDC), Mayo Clinic, NIH, NHLBI, and the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDKD). The key terms used in the database search were HTN, DASH diet, DASH diet adherence, and BP.

The exclusion criteria were articles older than five years, the pregnant population, the pediatric population, the diabetic populations, and the acute care setting. The inclusion criteria were articles in full text, published within five years, English language, and scholarly articles. The adult population reviewed is 30-65 years of age with primary HTN or with comorbid conditions with a focus on HTN.

The search yielded 285 articles but 250 were excluded due to the title of the article and abstract reviews which did not support the DASH diet in HTN management. Thirty-five articles were reviewed for eligibility based on the inclusion criteria. Four articles supported the DASH diet in lowering BP with the DASH alone or with another intervention, four supported the importance of the DASH diet in lowering the BP and improving cardiovascular (CV) risk factors, four supported the importance of health care provider education to improve the DASH diet knowledge, and five supported the DASH diet adherence. A total of seventeen articles were selected and utilized for the study.

Review Synthesis

The literature was systematically reviewed. The chosen articles for the literature review included randomized controlled trials (RCTs), cross-sectional studies, quality improvement (QI) projects, systematic meta-analysis of RCTs, systematic reviews of cohort studies, an integrative review, and secondary data analyses.

The DASH diet has been proven to lower the BP by multiple points in two weeks (Mayo Clinic, 2019). Three RCTs and one systematic meta-analysis of RCTs supported the DASH diet in lowering BP with DASH alone or with another intervention. Two RCTs, one systematic meta-analysis of RCT, and one cross-sectional study supported the importance of DASH diet in BP reduction and improvement of CV risk factors. The importance of healthcare provider education has a significant impact in HTN management (Brunstrom, 2020). One RCT, two QI projects, and a cohort study supported the need of healthcare provider education in optimal BP control. DASH adherence is important in BP management (Soltani, 2020) which was supported by one study each of a RCT, QI project, a systematic review of a cohort study, integrative review, and secondary data analysis.

Review of Study Methods

A review of the study methodologies showed the identified themes are significant to this DNP project. Studies are assigned levels of evidence (LOE) based on the methodological quality of its design, validity, and applicability to patient care. The levels give strength to the recommendations of the studies.

The literature reviewed included one LOE I systematic meta-analysis of a RCT (Filippou et al., 2020) and three LOE II RCTs (Naseem et al., 2016; Jurashek et al., 2017; Jurashek et al., 2018) to support DASH diet in lowering the BP with DASH alone or with another intervention.

One LOE I systematic meta-analysis of RCT (Siervo et al., 2015), two LOE II RCTs (Rifai et al., 2015; Chiu et al., 2016), and one LOE VII cross-sectional study (Tiong et al., 2018) supported the importance of DASH diet in BP reduction and improvement of CV risk factors. One LOE II RCT (Sany et al., 2020), one LOE IV cohort study (Brunstrom et al., 2020), and two LOE VI QI (Won, 2015; Sadeghi et al., 2019) projects supported the importance of provider education in HTN management. The literature reviewed supported the importance of DASH adherence in BP control with one each of LOE II RCT (Rodriguez et al., 2019), LOE IV systematic review of cohort studies (Soltani et al., 2020), LOE VI QI project (Barbosa, 2017), and two LOE VII, an integrative review of RCTs (Tam et al., 2020), and secondary data analyses (Kim et al., 2016) which supported the identified themes.

These methods are significant to the aim of the studies done and are significant to this DNP project. The study methods are reliable, valid, reproducible, and all showed the same results of reduced BP and CV risks with lifestyle modification such as DASH diet. The study methods also showed comparable results regarding the importance of physician education about the DASH diet, its implementation, and diet adherence for optimal BP management.

Literature Theme Development

The goal of this literature review was to provide an objective account through synthesis and analysis of existing evidence regarding the importance of the DASH diet in HTN management.

HTN Protocol Compliance

The 2017 Guideline for high BP emphasized the importance of treatment and strategies to improve HTN treatment and control (Whelton et al., 2018). The guideline emphasized the

importance of using an average based BP on two or more readings on two or more occasions to estimate the patient's BP.

The National Committee for Quality Assurance (NCQA) is an agency that developed and maintained the Healthcare Effectiveness Data and Information Set (HEDIS). HEDIS is a set of standardized measurement tools of quality utilized by the Centers of Medicare and Medicaid Services (CMS) and insurance companies to determine if a quality measure is met (NCQA, 2020). HEDIS assesses how well hypertensive patients manage their condition as uncontrolled BP can result in heart attack, stroke, and kidney disease (HEDIS, 2019). The NCQA's new BP target is less than 140/ 90 mmHg for adults age 18-85 diagnosed with HTN.

Naseem et al. (2016) assessed changes in SBP and diastolic BP (DBP) after implementation of the DASH diet. The control group had a routine diet while the intervention group had a diet containing 1,500 mg of sodium with 2,000 calories. The results showed a diet restricted in salt, rich in fruits, vegetables and low-fat dairy foods and reduced saturated and total fat lowered the BP among the Pakistani hypertensive populations.

Juraschek et al. (2017) compared the effects of low sodium versus DASH diet on baseline BP of adults with pre- or stage I HTN who were not using antihypertensive medications. The diets were low or high sodium, DASH or control (typical American diet), or both (low sodium-DASH vs. high sodium-control diets). Results showed a combination of reduced sodium intake and adherence to the DASH diet reduced the BP among pre- and stage I hypertensives. The SBP reductions were greater at higher levels of baseline SBP of greater than or equal to 150 mm Hg.

Juraschek et al. (2018) showed the timeframe of BP reduction after starting the DASH diet. The DASH-Sodium trial among adults with pre- or stage I HTN without anti-hypertensives

showed a reduced sodium diet did not lower the BP within four weeks. The DASH diet showed BP reduction within one week, but it did not show any further BP lowering effect thereafter.

Filippou et al. (2020) found the use of the DASH diet compared to a control diet showed lower SBP levels at a higher extent in trials with sodium intake greater than 2,400 mg per day than in trials with sodium intake less than 2,400 mg per day. The SBP and DBP were much lower in trials with a mean age less than 50 years compared to the older participants. The use of DASH diet showed a significant BP reduction among hypertensive and non-hypertensive adults.

Lifestyle Modification with DASH Diet

The World Health Organization ([WHO], 2019) recommended the reduction of salt intake to less than five grams and consumption of more fruits and vegetables in HTN management. The CDC and the WHO launched the Global Hearts Initiative in 2016 to support governments to improve the prevention and management of cardiovascular diseases, HTN detection, and lifestyle management such as the DASH diet (WHO, 2019). A lifestyle change such as diet modification was recommended by experts when they created the national guidelines to manage HTN (Whelton, 2018).

Rifai et al. (2015) discussed the impact of the DASH diet on endothelial function, exercise capacity, and quality of life in congestive heart failure (CHF) patients. The DASH group had a DASH diet guidebook from the United States Department of Health and Human Services (USDHHS), a DASH shopping list, and a DASH diet component reference. The results showed the DASH diet improved arterial endothelial function upon measurement.

The DASH diet, in combination with low-fat dairy foods, has been shown to decrease BP including LDL and HDL cholesterol (Chiu et al., 2016). The participants were given a control diet, standard DASH diet and a higher-fat, lower-carbohydrate modification of the DASH diet

(HF-DASH) to determine the effect on blood pressure, plasma lipids, and lipoproteins. The HF-DASH diet lowered the BP with the same extent as the DASH diet with reduction in plasma triglyceride and very low-density lipoprotein (VLDL) concentrations without increase in LDL.

Siervo et al. (2015) investigated the effects of the DASH diet on CV risk factors such as BP, glucose, and lipids (total cholesterol [TC]), high density lipoproteins (HDL), LDL, and triacylglycerols (TAG). The DASH diet resulted in marked reduction in BP, TC, and LDL concentrations. The BP reduction was more pronounced among participants with higher BP or body mass index (BMI) at baseline. The changes can result in a reduction of the risk scores for myocardial infarction (MI) and stroke.

The study by Siervo et al. (2015) found the DASH diet effectively lowered the BP and improved CV risks which was consistent in the cross-sectional study done in the East to determine if BP, fasting lipid profile, and fasting glucose were similar among Malaysians and Filipinos (Tiong et al., 2018). The DASH score was computed from the 22-item food frequency questionnaire and focused on specific food groups in the DASH diet. The scoring system included sodium and computed a DASH score based on the directly reported food groups. A higher score indicated higher consumption of the specific food groups in the DASH diet. The cross-sectional study showed older individuals who followed the DASH diet with regular physical activity had significantly higher DASH scores. Filipinos had a stronger association between DASH score and CV risk factors. The higher DASH score of the Filipinos showed reduction in SBP, DBP, TC, and LDL. The Malaysian population study also showed an association between the DASH score and CV risk factors; however, it only lowered the TC and LDL levels (Tiong et al., 2018).

Provider Barriers to DASH Diet Education

Health literacy (HL) affects a person's ability to acquire, understand, and utilize information regarding health and health services (Batterham et al., 2016). A RCT by Sany et al. (2020) on communication skills training for physicians showed improved HL and medical outcomes among hypertensive patients. The quality of physician-patient communication is a modifiable element of the medical communication that influences health-outcomes in hypertensive patients. A patient who understands their medical condition and plan of care has higher compliance with improved medical outcomes, health literacy, safety, and adherence (Batterham et al., 2016).

The QI project by Won (2015) determined lack of clinician knowledge about DASH diet was the cause of its lack of promotion for newly diagnosed hypertensive patients in a primary care clinic. Additionally, a root cause analysis showed 87 % of the clinicians heard about DASH diet but only 8 % had knowledge about its nutrient components. Won (2015) attributed the 46 % increase in DASH diet referrals to the education received by the clinicians about its evidence-based benefits.

Sadeghi et al. (2019) conducted a QI project to improve BP control by optimization of guideline directed therapy for HTN in a primary care setting. The QI project included a root cause analysis which identified lack of physician education regarding the American College of Cardiology/American Heart Association (ACC/AHA) guidelines. Furthermore, medication reconciliation was a barrier to optimal BP control. The engagement and synergy of the multidisciplinary team lead off to their success.

The results of the literature reviewed revealed that physician education regarding the DASH diet leads to improved knowledge about its importance in BP control. This was consistent

with findings from Brunstrom et al. (2020), which revealed a positive correlation between physician education and feedback on HTN management.

DASH Diet Adherence

Rodriguez et al. (2019) evaluated the effects of a trans-theoretical model (TTM)-based tailored behavioral intervention (TBI), a non-tailored intervention (NTI), and usual care on DASH dietary patterns to promote adherence to DASH diet. The study found that a phone-delivered tailored TTM-based intervention showed greater improvement in the patient's DASH dietary adherence. Furthermore, Tam et al. (2020) performed an integrative review on the effectiveness of educational interventions on adherence to lifestyle modifications among hypertensives. The review showed improved and reinforced adherence behavior on lifestyle modifications such as diet. Non-adherence to dietary recommendations is an unhealthy behavior but a modifiable lifestyle factor in HTN management (Cherfan et al., 2018).

Soltani et al. (2019) found a correlation between adherence to DASH diet in relation to decreased mortality. The study showed even a modest adherence to DASH diet had a lower of all-cause and cause-specific mortality from cardiovascular disease (CVD), cancer, and stroke since it is high in some bioactive compounds like fiber, vitamins, phytochemicals, and minerals. The DASH diet is low in harmful compounds found in processed meats, salt, and sugar sweetened beverages (Mozaffarian, 2016).

Barbosa (2017) used pamphlets to enhance patient education and promote adherence to DASH diet and HTN. Additionally, Kim and Andrade (2016) performed a secondary data analysis which showed hypertensive patients did not follow the national dietary guidelines because they are not informed about it. The studies both showed DASH adherence is improved by education and behavior interventions.

Suboptimal Provider Communication

Patients are commonly seen in the primary care setting which plays an important role in the prevention and management of HTN (Carey et al., 2018). Primary care providers should have communications skills training since it can be an efficient way to clarify the needs of the patients with limited HL and improve communication between the physician and the patients (Sany et al., 2020). Lack of healthcare provider knowledge regarding the DASH diet in HTN management could cause nonadherence to the dietary guideline for optimal BP (Sadeghi et al., 2019).

Conclusions from Literature Review

The review of literature supports the fact that DASH diet reduces the BP and improves CV risks. The literature review included RCTs, cross-sectional studies, QI projects, systematic meta-analysis of RCTs, systematic reviews of cohort studies, integrative review, and secondary data analysis.

Suboptimal care at the project site was identified as lack of healthcare provider knowledge regarding the DASH diet in HTN management. The recommended DASH dietary guidelines were not followed in the project site primary care setting due to the healthcare provider's failure to educate patients on the importance of the DASH diet in HTN management. The project site does not have any DASH diet educational protocol in place and the healthcare providers and clinic staff is currently unaware of its benefits. The literature review conducted supports the implementation of a DASH diet educational protocol and education of the clinic staff and healthcare providers at the project site.

Project Rationale

The project site currently has no DASH diet educational protocol in place regarding HTN management. Studies have shown the importance of the DASH diet in optimal BP control

(Naseem et al., 2016; Jurashek et al., 2017; Filippou et al., 2020). Based on the literature review, healthcare provider education is important in HTN management (Sadeghi, et al., 2019; Won, 2015).

Project Aims

The aims of this QI project are to educate the clinic staff and healthcare providers regarding the importance of the DASH diet in HTN management. A DASH diet educational protocol will be created and implemented at the project site. The clinic staff and healthcare providers will be educated with a goal of improving their knowledge and understanding about the importance of the DASH diet in HTN management. The aims of this QI project will be achieved within a four-week time frame.

Objectives

1. Formulate and implement an evidence-based DASH diet educational protocol for HTN patients for optimal BP control at the project site.
2. Conduct an evidence-based educational session for the clinic staff and healthcare providers about the importance of the DASH diet in the management of HTN one week prior to the implementation of the DASH diet educational protocol.
3. The healthcare provider will educate eligible HTN patients regarding the importance of the DASH diet in HTN management.
4. A pre- and post-education DASH diet questionnaire will be distributed and answered by the clinic staff and healthcare providers to determine the effectivity of the DASH diet education provided. Patients will be given a handout on information regarding the DASH diet.

5. The clinic staff and healthcare provider will be compliant with national standards for care pertaining to HTN management with the DASH diet educational protocol implementation.

Theoretical Framework

The Institute for Healthcare Improvement ([IHI], 2021a) uses the science of improvement to initiate changes with emphasis on innovation, rapid-cycle testing, and learning what changes result in improvements. The IHI's methodology led to the development of the Model for Improvement (MFI) as the framework to guide improvement tasks (refer to Appendix A for the MFI diagram). The MFI is a simple and effective tool to bring about positive change and accelerate improvement (IHI, 2021a). QI methods in healthcare support the delivery of care that is safe, timely, effective, efficient, equitable, and cost effective (Reed & Card, 2016). The implementation of a QI project using the DASH diet educational protocol in this practice setting aligns with the HTN management guidelines recommended by the AHA (Whelton, 2018).

The Plan-Do-Study-Act (PDSA) cycle is a structured experimental learning approach to test changes (Reed & Card, 2016). PDSA cycles are commonly used tools in healthcare quality improvement with each test of change tested individually and on a small scale (Christoff, 2018). The MFI's focus is testing changes on a small scale using the PDSA cycles (IHI, 2021a). The four-step circular cycle of the MFI model includes: (a) Plan - plan a test for the identified QI (b) Do - implement the intervention for the change using a small-scale approach (c) Study - analyze the results. Was it effective or not? (d) Act - what action will be taken? The action is based on the data evaluated in the prior phase (IHI, 2021c). The PDSA cycle can be repeated as it is a continuous cycle of QI based in scientific method (Leis & Shojanian, 2017).

Historical Development of the Conceptual Model

The IHI's (2021a) methodology started with W. Edwards Deming, who taught that by adhering to certain principles of management, organizations can improve quality and reduce costs. The Associates for Process Improvement developed the MFI based on Deming's work (IHI, 2021a). It was a simple, effective tool to expedite improvements.

The first part of the MFI is comprised of three fundamental questions. The first question is, "What are we trying to accomplish?" These are the aims which should be time-specific, measurable, and defines the participants or system which will be affected. The second question is "How will we know that a change is an improvement?" Quantitative measures will be used to determine if the identified specific change resulted in an improvement. The third question is, "What change can we make that will result in improvement?" It is important to identify the selected change that needs improvement.

The second part of the MFI is the PDSA cycle. The PDSA methodology is a four-step process and is one of the most used tools in healthcare QI projects (Christoff, 2018). The QI is based in scientific methods and the key to its successful use is to ensure each cycle has a well stated prediction or plan (Leis & Shojania, 2017). The "Plan" includes predictions of outcomes that are well defined, and tasks are assigned such as who, what, when, and where. The "Do" is the implementation of the plan whereas data collection and result analysis are in the "Study" phase. The "Act" phase is where the plan is accepted, changed, or abandoned based on the results of the study phase (IHI, 2021c).

Application to the DNP Project

The MFI was chosen for this quality improvement project. The MFI questions for this project are: 1) What are we trying to accomplish? 2) How will we know that a change is an improvement? and 3) What changes can we make that will result in improvement?

To address “what are we trying to accomplish?” with this QI project, the aim is to educate the clinic staff and healthcare providers regarding the importance of lifestyle modifications such as the DASH diet in HTN management. A chart review of the eligible hypertensive patients will be done prior to implementation collecting twelve weeks of data before and four weeks after the implementation of the DASH diet educational protocol to determine if there was improvement in chart documentation regarding the patient’s education. The chart review will assess the efficacy of the teaching done with clinic staff and providers on the DASH diet education protocol with HTN patients. In the chart review, the DNP student will assess compliance from clinic staff and providers by reviewing the documentation in the charts of eligible HTN patients.

The next question to be addressed is, “how will we know that a change is an improvement?” Currently, the project site has no HTN management protocol utilizing lifestyle changes such as the DASH diet in optimal BP control. The change is documentation by the healthcare provider of DASH diet education discussed with every hypertensive patient during the chart review.

The clinic staff and healthcare providers will answer a pre- and post-education questionnaire to assess their knowledge of the DASH diet in BP control. The eligible patients’ charts will be reviewed to determine what documentation if any, was done four weeks prior to

DASH diet education, and if DASH diet education was done four weeks post implementation of the DASH diet educational protocol.

“What changes can we make that will result in improvement?” Based on the literature available, lack of clinician knowledge about the DASH diet or lack of knowledge about ACC/AHA guidelines in BP control was the reason for the lack of recommendation for its use (Won, 2015; Sadeghi et al., 2019).

The clinic staff and healthcare providers will be educated regarding the importance of the DASH diet in HTN management (see Appendix E) and a DASH diet protocol (see Appendix D) will be implemented at the project site. The clinic staff and healthcare providers will have increased awareness of the importance of the DASH diet and the healthcare providers will educate and implement a DASH diet plan with their hypertensive patients. The project site will have a DASH diet educational protocol for hypertensive patients.

The second part of the MFI will utilize the PDSA cycles for the small, rapid-cycle tests of change within a short period of time.

Major Tenets of the Conceptual Model

Plan

The “plan” portion of the PDSA cycle is planning the test including a timeline for data collection (IHI, 2021c). The objectives will be defined including predictions of what will happen and why. Lastly, the plan is to find out where and when this test will take place will be determined (IHI, 2021c).

The “plan” portion of this QI project will include the education of one physician, two nurse practitioners, one physician assistant, one clinic manager, and four medical assistants in a private internal medicine and family practice office. The planning portion includes the pre- and

post-education questionnaire about HTN management with the DASH diet. The planning portion will also include the DASH diet handout for the clinic staff and healthcare providers which the DNP student will utilize. The healthcare providers will give the patients a copy of the DASH diet handout (NHLBI, n. d.). The DNP student plans to formulate an evidence-based DASH diet educational protocol to implement in this practice setting for improved HTN management.

This project will be implemented in one cycle and will include an educational session. The clinic staff and health care providers will be given a DASH diet handout (see Appendix F) during the educational session regarding its importance in BP control and sample foods one week prior to the implementation of the DASH diet educational protocol in this project site. A template will be provided for the clinic staff and healthcare provider to document the implementation of the DASH diet educational protocol (see Appendix G). The project lead will consult a statistician to ensure the planned statistical testing is appropriate to measure the objectives of this project. The project lead anticipates screening eligible patients in this practice setting four weeks after the clinic staff and healthcare provider educational session.

In the implementation phase, one of the tools is a pre- and post-education questionnaire which will be distributed and answered by the clinic staff and healthcare providers regarding the importance of the DASH diet in BP control during the educational session.

Next, the DNP student will review the charts of the eligible hypertensive patients aged 30-65 to determine if BP screening and HTN management education using the DASH diet protocol was discussed with the patient twelve weeks pre- and five weeks post-implementation of the DASH diet educational protocol. The tools utilized will assist the healthcare providers to practice in accordance with the HTN guidelines and will assist the project lead in data collection.

Do

The “do” is the implementation of the test on a small scale. The team will be informed of the test and its implementation (IHI, 2021c). The problems and unexpected observations will be identified and documented as they occur during this phase. The analysis of the data will start in this phase (IHI, 2021c).

After the educational session of all the clinic staff and healthcare providers are completed, the plan is to assess the knowledge of clinical staff and healthcare providers with a post-education questionnaire regarding the DASH diet, its food groups, and importance in HTN management (see Appendices H & I). The medical assistant will take and record the vital signs of the eligible hypertensive patients in the electronic health record (EHR). The DASH diet educational protocol will be administered to each eligible hypertensive patient when placed in the exam room. Handouts about the DASH diet, its importance in optimal BP control, and a list of sample foods will be given by the healthcare provider to the eligible hypertensive patients. The healthcare provider will discuss the DASH diet handout and educate the eligible hypertensive patient regarding the importance of the DASH diet in their BP control during the clinic visit. The healthcare provider will document in the patient’s chart that DASH diet education was provided in the patient education document which will be gathered and checked by the medical assistant for completeness and scanned in the EHR or placed in the patient’s medical record for review by the project lead.

Study

The “study” phase will be the time to analyze the data. A comparison of the data to the predictions will be made including best practices according to the NIH, AHA, and HEDIS measurements on HTN management with DASH diet. The data obtained will reflect the results

of the pre- and post-education survey and the rates of DASH diet protocol adherence based on the chart review documentation.

The data collected will be analyzed. The project lead will compare the data with the predictions made prior to the initiation of the PDSA cycle. Specific statistical testing will be performed. The DNP student will analyze what worked, identify the problem(s), and modify the process as needed. An analysis of the process change will be completed at the end of the cycle. A plan for the dissemination of the project results will be initiated.

Act

The “act” phase is the final portion of the PDSA cycle. This is the phase to make changes based on what was learned (IHI, 2021c). A decision will be made if modifications are needed from the small-scale test so a plan for the next test can be prepared, if necessary (IHI, 2021c). The four-steps of the PDSA cycle can be repeated for continued QI and new learning in this experimental process (Reed & Card, 2016).

The analysis of the project results starts after the cycles are completed. The DNP student will share the results with the stakeholders, the clinical staff and healthcare providers at the project site, students, and faculty at Touro University, Nevada. After the project results are completed and disseminated, the DNP student will meet with the stakeholders to implement the project change as to adopt it completely, adopt with changes or abandon. If the project change is adopted, sustainability must be ensured at this practice site.

Setting

The project site is a private internal medicine and family practice clinic in a middle-class area in Pomona, California. It is a moderately sized practice of approximately four thousand patients. The physician, physician assistant, and the two nurse practitioners each see

approximately sixteen patients on their scheduled work days. The patient age ranges from the 30s to the 80s. The project site utilizes Practice Fusion electronic health records (EHR) and accepts all types of insurance. Appointments are required, and due to the Covid-19 pandemic, patients cannot walk in and be seen the same day. Patients are instructed to go to urgent care or the emergency department if their medical needs require immediate attention.

The clinic is a single story building with its own parking lot. One side of the clinic is for the physician assistant and nurse practitioners with three examination rooms. The middle section is the reception area, medical records, and billing department. The other side is the physician office with three examination rooms.

Population of Interest

The direct population of interest is the clinic staff, including one clinic manager, four medical assistants, and the healthcare providers (one physician, one physician assistant, and two nurse practitioners). The educational background of the participants ranges from a Certificate of Medical Assistance to a Doctorate of Medicine. The clinic manager has eight years of work experience while the medical assistants have five, four, and three years of work experience, respectively. The physician assistant has thirteen year, the nurse practitioners have two year and four years of work experience, respectively. The physician has 17 years of experience.

The indirect population are the eligible hypertensive patients aged 30-65 receiving care at the project site. The indirect population will be educated by the healthcare providers regarding the importance of the DASH diet for HTN management on initial diagnosis and once a final diagnosis can be made.

Stakeholders

The key stakeholders are the medical staff (physician assistant, nurse practitioners, medical assistants, and clinic manager) and the physician-owner. The nurse practitioners, physician assistant, and physician-owner are responsible to ensure the project site is in compliance with the HTN management guidelines according to the NCQA quality measures. The medical assistants and clinic manager will assist the nurse practitioners, physician assistant, and physician-owner to ensure the project site is compliant with the standardized quality measures.

The DNP student will educate the medical staff regarding the importance of the DASH diet in HTN management. The QI process will be presented during the educational training. The medical assistant will take the BP of the eligible hypertensive patient. If the BP is elevated, the medical assistant will place the DASH diet handout in the patient's chart, DASH diet education document, and a post-it to inform the healthcare provider of the elevated BP. The healthcare provider will determine the diagnosis of HTN and subsequently provide education regarding the importance of the DASH diet in HTN management by utilizing the DASH diet handout along with a list of its food groups and a copy given to the patients. The healthcare provider will document in the patient's chart that the DASH diet handout, its food groups, and the DASH diet education was provided in the patient education document. The medical assistant will gather the DASH diet education documentation, check it for completeness, and add any necessary information into the patient's chart. A follow up appointment for the patient will be scheduled by the medical assistant in one month.

Permission to complete project at the site was signed by the Clinic Administrator (see Appendix B). An affiliation agreement was not necessary.

Interventions

The purpose of this DNP project is to implement an evidence-based DASH diet educational protocol for the management of and an educational protocol was created (see Appendix D). To meet the clinical objectives of the project, an outline of the DASH diet educational protocol session for the clinic staff (clinic manager and medical assistants) and health care providers (physician, physician assistant, and nurse practitioners) was created (see Appendix E). The DASH diet educational protocol session includes the introduction, distribution of the DASH diet pre-education questionnaires/ gathering of answered questionnaires, review of HTN and DASH diet protocol, discussion of the DASH diet education, DASH food groups, health benefits of HTN management, strategies to get started on the DASH diet, distribution of the post-education questionnaires, and gathering of answered questionnaires for the clinic staff and healthcare providers.

The clinic staff and healthcare providers will have an evidence-based DASH diet educational protocol session one week prior to its implementation at the practice site. A pre- and post-education DASH diet questionnaire was created (see Appendices H & I) that the clinic staff and health care providers will answer during the educational session. The questionnaire focuses on the following goals of the project: assessing medical staff knowledge about the DASH diet protocol, the DASH diet and its food groups, and the importance in the management of HTN.

Twelve weeks of data will be collected pre-implementation of the DASH diet education protocol and five weeks of data will be collected post- implementation of the DASH diet education protocol. The DNP student will review the charts of eligible hypertensive patients aged 30-65 to determine if BP was taken post-implementation of the DASH diet protocol upon follow up in one month. The patient education document will be reviewed to determine if the health

care provider educated the patient post-implementation of the DASH diet protocol about the importance of HTN management and education provided was documented.

Tools

The DASH diet educational protocol was developed and validated by the DNP student through expert consultation with both the stakeholders and project team (see Appendices D and E) as there was no existing protocol. To evaluate an outcome of this project, the instrument selected is a pre- and post-educational questionnaire that was developed and validated by the DNP student through expert consultation with both the stakeholders and project team (see Appendices H & I). The pre- and post- educational questionnaire is used to evaluate and validate the efficacy of the DASH diet educational protocol session for the clinic staff and health care providers. The pre- and post-educational questionnaire was validated using Content Validity Index (CVI) by the expert project mentor and project team.

The DASH diet handout was created, adapted, and appropriately referenced by the DNP student (see Appendix F). Permission to use the DASH diet handout included approval from the stakeholders and project team. No additional permission is required as the tool was created, adapted, and properly referenced for this project. A DASH diet education document was created (see Appendix G) by the DNP student for the healthcare provider to document the education they provided to eligible hypertensive patients through expert consultation and validation with both the stakeholders and the project team.

Study of Interventions/-Data Collection

Data will be collected pre-implementation and five weeks post-implementation of the DASH diet educational protocol for the management of HTN through chart review to assess healthcare provider adherence to the protocol. Additionally, data will be collected from pre- and

post-educational questionnaires. Confidentiality during this process will be maintained with a letter code assigned to each clinic staff and healthcare provider by the project lead.

Ethics/-Human Subjects Protection

An Institutional Review Board (IRB) determination form was submitted to the Touro University, Nevada IRB showing that the DNP student is conducting a QI project and does not require an IRB. The project only requires QI Committee oversight that is used at the project site. There is no risk or compensation for the participants. The DNP student has met with the clinic staff and healthcare providers. The clinic staff and healthcare providers are in agreement to conduct the QI project at the practice site. The clinic staff and healthcare providers work in the practice site, so there is no need to recruit.

Measures/-Plan for Analysis

The evidence-based DASH diet educational session for the clinic staff and healthcare providers will be conducted one week prior to the implementation of the DASH diet protocol. The educational session will include a pre- and post-education questionnaire (see Appendices H & I) to assess the efficacy of the DASH diet education provided. The DASH diet protocol will be implemented one week after the DASH diet educational session is completed.

The project lead will conduct a chart review of data prior to the implementation of the DASH diet education protocol and five weeks post-implementation of the DASH diet education protocol (see Appendix K). The chart review will compare BP of the same patients pre- and post-implementation of the DASH diet education using a t-test. The chart review will also assess if the healthcare provider completed a DASH diet education and documentation.

A t-test will be used for the statistical analysis of the pre- and post-educational DASH diet questionnaires to compare the before and after scores using SPSS. The t-test compares the

values on dependent variables for two groups or on two occasions (Pallant, 2016). This statistical test is appropriate to compare the mean scores for the same group of people on two different occasions as in this case.

The DNP student will also review the charts of eligible HTN patients before and after the implementation of the DASH diet protocol to determine if education was provided and documented at the visit. A descriptive statistical analysis using plot graphs will be used to compare the data.

A TUN statistician was consulted for this project. There may be further need for a statistician who will review and analyze the data to be hired by the project lead.

Analysis of Results

The goals of a DNP project are to improve outcomes by addressing identified issues within healthcare, build evidence-based practice (EBP) skills, and develop a foundation for ongoing practice scholarship (Zellefrow, 2019). This quality improvement project implemented an evidence-based DASH diet educational protocol in the management of HTN in a primary care clinic and created an educational protocol for the clinic staff and healthcare providers. The data analysis showed an improvement in knowledge about the importance of the DASH diet in HTN management before and after the educational session and was evaluated using the Wilcoxon signed rank test, The compliance of the healthcare providers in providing education to the eligible hypertensive patients based on chart audits was determined using the 95% confidence interval based on the Clopper-Pearson's exact method. Analysis of the data utilized the Statistical Package for the Social Sciences (SPSS) version 23.

Characteristics of Participants

There were a total of nine participants. The participants are described by number, years of experience (2-5, 6-9, >=10), and type of health professional category.

Table 1

Characteristics of participating providers (N=9)

	N (%)
Years of Experience:	
2-5	6 (66.7%)
6-9	1 (11.1%)
10+	2 (22.2%)
Type of health professional:	
Clinic manager	1 (11.1%)
Medical Assistant	4 (44.4%)
Physician Assistant	1 (11.1%)
Nurse Practitioner	2 (22.2%)
Physician	1 (11.1%)

SD = Standard Deviation

A total of nine staff members attended the DASH diet educational protocol session and completed the pre- and post-education questionnaires. The participants included one clinic manager (11.1%), four medical assistants (44.4%), one physician assistant (11.1%), two nurse practitioners (22.2%), and one physician (11.1%).

Pre and Post DASH Diet Education Scores

The DASH diet pre- and post-education questionnaires have five questions that focused on the DASH diet including: its food groups, health benefits, understanding of the DASH diet, and the DASH protocol. The questionnaire has a five-point scale with answers that ranged from 1 = complete agreement to 5 = complete disagreement. A sample question is: "I am aware what DASH stands for."

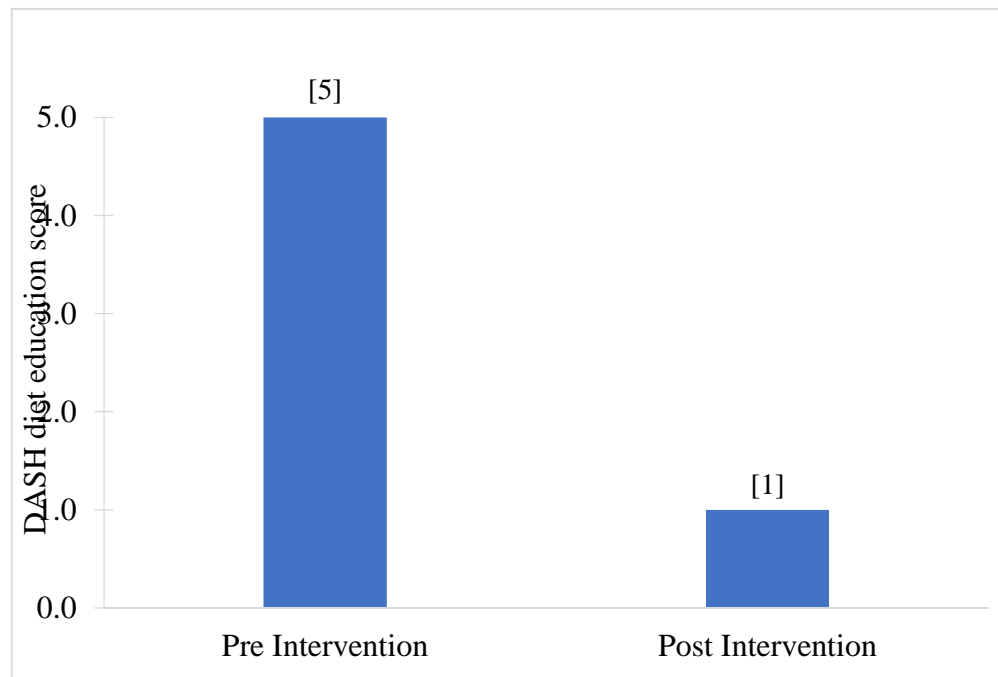
All participants had a median score of 5.0 [IQR 4.4, 5.0] pre-intervention. Six participants were in the same room during the educational session and had questions on their initial test which was discussed prior to the second test. Three participants talked to each other while answering the second test. The score improved to 1.0 showing 100% improvement in awareness and understanding of the DASH diet educational protocol. This indicates a high level of awareness and understanding post intervention (score = 1.0) and was evaluated using the Wilcoxon signed rank test ($Z = -2.751$, $p = 0.006$). The p value is less than 0.05 which indicates that the two sets of scores are significantly different.

The common assumptions made when doing a t-test include the scale of measurement, random sampling, normality of data distribution, adequacy of sample size, and equality of variance in standard deviation. The results of the provider awareness showed a violation of normality. A paired t-test was not performed to assess the significance of improvement in provider awareness because the sample size was insufficient for determining normality. As a result, the non-parametric equivalent to the paired t-test, the Wilcoxon signed rank test was deemed appropriate.

A bar chart was created to describe the median score on the DASH diet questionnaire pre- compared to post-intervention. Improvement in provider awareness and understanding based on the DASH diet education questionnaire score was evaluated for significance using a Wilcoxon signed rank test.

Figure 1

DASH diet education score among clinic staff and healthcare providers, (N=9)



Note. Score ranges from 1-5 with lower scores indicating better awareness and understanding of the DASH diet education protocol (range: 1 = Complete agreement to 5 = Complete disagreement).

Patient Characteristics

Patient characteristics were also described by number and percentage in respective age, gender, and race categories. A total of 61 patients met the criteria to receive the DASH diet educational protocol. Patient age ranged from 30-65 years with 62.3% \leq 60 years of age.

Table 2*Characteristics of patients (N=61)*

	N (%)	Mean (SD)
Age, years:		55.8 (8.1)
<=60	38 (62.3%)	
61-65	23 (37.7%)	
Gender:		
Female	32 (52.5%)	
Male	29 (47.5%)	
Race:		
African-American	1 (1.6%)	
Asian	6 (9.8%)	
Caucasian	10 (16.4%)	
Hispanic	44 (72.1%)	

SD = Standard Deviation

Chart Audit for Provider compliance

The compliance of the healthcare providers in providing the DASH diet education to manage the BP of the eligible hypertensive patients was determined during the chart audit of the 61 eligible hypertensive patients.

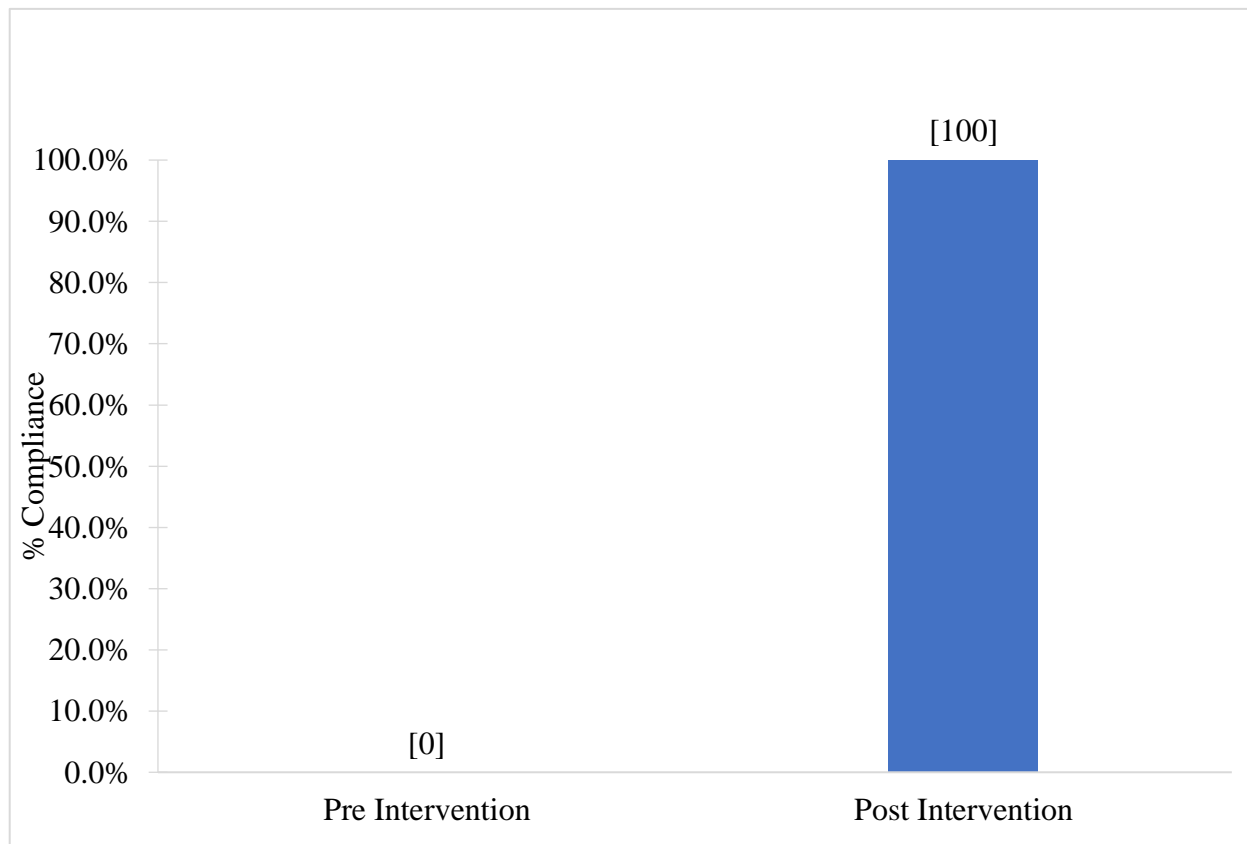
In the pre-implementation period, the DNP student conducted a 12-week chart review of the clinic's hypertensive patients aged 30-65 to determine if a DASH diet education had been provided by the healthcare providers (physician, nurse practitioners, and physician assistant). Prior to this project's implementation, the site had no documentation or protocol in place pertaining to the DASH diet education in the management of the clinic's hypertensive patients. Sixty-one charts were audited during the pre-implementation to determine the use of the DASH diet protocol. There was no chart documentation of the DASH diet education protocol noted.

On the first day of implementation, the MA forgot to give the providers the DASH diet education document. One provider documented in the patient's chart that the DASH diet education was provided to the patient. The other two providers educated the patient and were reminded to complete the education document and scanned in the patient's chart. The MA was immediately re-educated by the DNP student about the DASH diet educational protocol to ensure it is implemented based on the project plan. The DNP student conducted weekly checks with the MA and healthcare providers to ensure the protocol was implemented as planned.

In the post-implementation period, the same 61 charts were audited. All 61 charts have documentation noting implementation of the DASH protocol including showing that patient education on the diet was provided by the healthcare providers to the eligible hypertensive patients during the clinic visit. The compliance rate of the healthcare providers on the DASH diet educational protocol was 100 % based on the chart audits. The compliance rate of the healthcare providers was described with a corresponding 95% confidence interval around estimate based on the Clopper-Pearson's exact method. The Clopper-Pearson exact method is the standard method for calculation of binomial confidence intervals and allows assessment with input of 0.999 (close to 1000% for 99.9% value with rounding) otherwise the value is not determinable from normal approximation with no variation such as 100%.

Figure 2

Healthcare provider compliance to the DASH diet patient education in HTN management



The purpose of this DNP project was to educate the clinic staff and healthcare providers on the importance of the DASH diet in HTN management and to implement an effective protocol in the primary care setting was achieved. The project results were in alignment with the project topic and objectives.

Discussion of Findings

The literature review supports the idea that increased health literacy and provider knowledge regarding lifestyle modifications is important in HTN management.

Provider Education

The result of the data analysis indicated the clinic staff and healthcare providers had an increased understanding of the DASH diet protocol and its importance related to BP control after the DASH diet educational session was held based on the pre- and post-education scores. The increased awareness of the healthcare provider enhanced compliance in educating their eligible hypertensive patients about importance of the DASH diet in regards to hypertension management. The step-by-step DASH diet educational protocol was intended to create an easy workflow to improve participant knowledge of the importance of the DASH diet in HTN management. The result is in alignment with the project question and objectives.

Sany et al. (2020) showed educational intervention among physicians lead to better BP control due to better physician-patient communication that influence health outcomes among hypertensive patients. One randomized controlled trial revealed health professionals could educate their hypertensive patients to improve and reinforce adherence to lifestyle modifications (Tam et al., 2020). The cohort studies conducted by Brunstrom et al. (2020) reported that educational approaches and feedback strategies directed at physicians and other healthcare workers reinforce the implementation of clinical guidelines for HTN management.

There is strong evidence linking the DASH diet and lower BP. Clinician awareness of the diet has increased its use (Won, 2015). The project data and findings of this quality improvement project are in alignment with the evidence that provider awareness of the benefits of the DASH diet in HTN control resulted in increased patient education about the diet.

Healthcare Provider Compliance to Patient Education

The result of the 61 charts reviewed pre- and post-implementation of the DASH diet protocol showed 100 % compliance of the participants in providing patient education after the

DASH diet educational session. The result is in alignment with the project question and objectives.

Significance/-Implications for Nursing

Provider education is very important in the management of health conditions through lifestyle changes such as the DASH diet in BP control (Sadeghi et al., 2019). Sufficient training of physicians impacts counseling, health literacy, self-efficacy, and adherence (Sany, 2020).

The implementation of this quality improvement project at the project site has increased the knowledge and awareness of the clinic staff and healthcare providers regarding the importance of the DASH diet in HTN management. The healthcare providers educated their eligible hypertensive patients regarding the DASH diet protocol which may subsequently improve HTN outcomes.

Limitations of the Project

Project Design

This quality improvement project had a limitation which should be addressed. The design of the project was limited due to the time frame. Several patients cancelled or preferred telehealth visits due to the Covid-19 pandemic. The project was conducted over four weeks and a longer timeframe would have allowed for more data to be collected.

Patients were scheduled to follow up in one month post education of the DASH diet educational protocol to check the BP. Thirty-five patients failed to show up or cancelled their appointment due to fear of the Covid-19 pandemic resurgence. Twenty-six patients called to report their BP which they took at home. Patient education regarding the DASH diet increased, however, it could not be determined if the patient followed the diet. Evidence shows increased DASH diet education often results in decreased BP. The DASH diet consisting of fruits,

vegetables, dairy products, low fat, and sodium content food help lower BP (Jurashek et al., 2017). Filippou et al. (2020) stated adoption of the DASH diet led to a significant decrease in BP amongst patients. However, due to the cancellations or no shows and the BP taken at home, it was not known if the BP did decrease for several patients.

Areas for Further Dissemination

Research dissemination is a planned process that involves consideration of target audiences, the settings in which research findings are to be received, and communication and interaction with wider audiences to facilitate research utilization and understanding (Ross-Hellauer et. al, 2020). The dissemination of this project is important due to the increased recognition and medical impact of the DASH diet in BP control. The DASH diet educational protocol may serve as an initial approach to promote the importance of healthcare provider education in HTN management of their eligible patients. This project will be presented to the stakeholders, the clinical staff and healthcare providers at the project site, students, and faculty at Touro University, Nevada. This project will be submitted to an external repository as required by Touro University, Nevada.

Project Sustainability

Sustainability describes how your project will survive and have a long-lasting impact (Wieners, 2019). This project is sustainable because the project site healthcare providers are interested in learning more about approaches in HTN management (Sadeghi et al., 2019). The DASH diet is evidence-based research which the healthcare provider can utilize to manage the BP of their eligible hypertensive patients at the project site.

Adherence to the step-by-step guide in the DASH diet educational protocol will be followed by the staff to ensure sustainability of this quality improvement project. The healthcare

providers will educate themselves regarding updates on the DASH diet in HTN management. A clinic multidisciplinary team will be formed and will review the DASH diet educational protocol at least annually to determine if it is still applicable to their practice and make revisions accordingly. The revisions of the DASH diet educational protocol will be discussed during the monthly staff meeting.

This project can be performed and replicated in any primary care clinic setting.

References

- America's Health Rankings (n. d.). *High blood pressure*.
<https://www.americashealthrankings.org/explore/annual/measure/Hypertension/state/AL>
 L
- American Heart Association (n. d.). *Health threats from high blood pressure*.
<https://www.heart.org/en/health-topics/high-blood-pressure/health-threats-from-high-blood-pressure>
- American Medical Association (2015). *AMA & John Hopkins blood pressure control resources*.
<https://www.ama-assn.org/delivering-care/hypertension/ama-johns-hopkins-blood-pressure-control-resources>
- Appel, L. J., Moore, T. J., Obarzanek, E., Vollmer, W. M., Svetkey, L. P., Sacks, F. M., Bray, G. A., et al. (1997). DASH Collaborative Research Group. A clinical trial of the effects of dietary patterns on blood pressure. *New England Journal of Medicine*, 336, 1117-1124.
- Barbosa, L. (2017). A quality improvement project to improve dietary habits in patients with hypertension in a cardiology clinic. [Doctoral dissertation, University of Kansas]. ProQuest Dissertations Publishing.
- Batterham, R. W., Hawkins, M., Collins, P. A., Ruchbinder, R. & Osborne, R. H. (2016). Health literacy: Applying current concepts to improve health services and reduce health inequalities. *Public Health*, 132, 3-12. <https://doi:10.1016/j.puhe.2016.01.001.01>
- Berkeley Life (2018). [Heart plate]. [Photograph]. *Berkeley Life*.
<https://www.berkeleylife.com/wellness/exercise/what-is-the-dash-diet/>
- Brunstrom, M., Ng, N., Dahlstrom, J., Lindholm, L. H., Lonnberg, G., Norberg, M., Nystrom, L., Weinehall, L., & Carlberg, B. (2020). Association of physician education and feedback

on hypertension management with patient blood pressure and hypertension control.

Journal of the American Medical Association Network Open, 3(1), 1-12.

<https://doi:10.1001/jamanetworkopen.2019.18625>.

California Health & Wellness (2019, January 01). *HEDIS for hypertension*.

<https://www.cahealthwellness.com/newsroom/hedis-for-hypertension-.html>

Carey, R. M., Muntner, P., Bosworth, H. B., & Whelton., P. K. (2018). Prevention and control of

hypertension: JACC health promotion series. *Journal of the American College of*

Cardiology, 72(1), 1278-1293. <https://doi:10.1016/j.jacc.2018.07.008>.

Centers for Disease Control and Prevention (2016). *Cost effectiveness of high blood pressure*

interventions. [https://www.cdc.gov/chronicdisease/programs-impact/pop/high-blood-](https://www.cdc.gov/chronicdisease/programs-impact/pop/high-blood-pressure.htm)

[pressure.htm](https://www.cdc.gov/chronicdisease/programs-impact/pop/high-blood-pressure.htm)

Centers for Disease Control and Prevention (2017). *High blood pressure*.

<http://www.cdc.gov/bloodpressure/index.htn>.

Centers for Disease Control and Prevention (2020, December 15). *Most people consume too*

much salt. <https://www.cdc.gov/salt/index.htm>

Cherfan, M., Vallée, A., Kab, S., Salameh, P., Goldberg, M., Zins, M., & Blacher, J. (2018).

Unhealthy behaviors and risk of uncontrolled hypertension among treated individuals -

The constances population-based study. *Scientific Reports*, 10(1925), 1-12.

<https://doi.org/10.1038/s41598-020-58685-1>.

Chiu, S., Bergeron, N., Williams, P. T., Bray, G. A., Sutherland, B., & Krauss, R. M. (2016).

Comparison of the DASH (Dietary approaches to stop hypertension) diet and a higher-

fat dash diet on blood pressure and lipids and lipoproteins: A randomized controlled trial.

The American Journal of Clinical Nutrition, 103(2), 341-347.

<https://doi.org/10.3945/ajcn.115.123281>

Christoff, P. (2018). Running PDSA cycles. *Current Problems in Pediatric and Adolescent Health Care*, 48(8), 198-201. <https://doi.org/10.1016/j.cppeds.2018.08.006>

Clancy, L. (2019). *Discussing your study's limitations*.

<https://www.internationalscienceediting.com/study-limitations/>

Filippou, C.D., Tsioufis, C.P., Thomopoulos, C.G., Mihas, C.C., Dimitriadis, K.S., Sotiropoulou, L.I., Chrysochoou, C.A., Nihoyannopoulos, P.I., and Tousoulis, D.M. (2020). Dietary approaches to stop hypertension (DASH) diet and blood pressure reduction in adults with and without hypertension: A systematic review and meta-analysis of randomized controlled trials. *Advances in Nutrition*, 11(5), 1150-1160.

<https://doi.org/10.1093/advances/nmaa041>

Harrison, T. N., Green, K. R., In-lu, A.L., Vansomphone, S. S., Handler, J., Scott, R. D., & Reynolds, K. (2016). Automated outreach for cardiovascular-related medication refill reminders. *The Journal of Clinical Hypertension*, 18(7), 641-646.

<https://doi.org/10.1111/jch.12723>

Institute for Healthcare Improvement (2021a). *Science of improvement*.

<https://www.ihl.org/about/Pages/ScienceofImprovement.aspx>

Institute for Healthcare Improvement (2021b). *How to improve*.

<https://www.ihl.org/resources/Pages/HowtoImprove/default.aspx>

Institute for Healthcare Improvement (2021c). *Science of improvement: Testing changes*.

<https://www.ihl.org/resources/Pages/HowtoImprove/ScienceofImprovementTestingChanges.aspx>

John Hopkins Medicine (n. d.) *Resistant hypertension*.

<https://www.hopkinsmedicine.org/health/conditions-and-diseases/high-blood-pressure-hypertension/resistant-hypertension>

Juraschek, S. P., Miller, E. R., Weaver, C. M., & Appel, L. J. (2017). Effects of sodium reduction and the DASH diet in relation to baseline blood pressure. *Journal of the American College of Cardiology*, 70(23), 2841-2848.

<https://doi.org/10.1016/j.jacc.2017.10.011>

Kim, H. & Andrade, F. (2016). Diagnostic status of hypertension on the adherence to the dietary approaches to stop hypertension (DASH) diet. *Preventive Medicine Reports*, 4, 525-531. <https://dx.doi.org/10.1016%2Fj.pmedr.2016.09.009>

Leis, J. & Shojania. (2017). A primer on PDSA: Executing plan-do-study-act cycles in practice, not just in name. *British Medical Journal Quality and Safety*, 26(7), 572-577.

<http://dx.doi.org/10.1136/bmjqs-2016-006245>

Mayo Clinic (2019, January 09). *10 ways to control high blood pressure without medication*.

[https://www.mayoclinic.org/diseases-conditions/high-blood-pressure/in-depth/high-blood-pressure/art20046974#:~:text=Eating%20a%20diet%20that%20is,Stop%20Hypertension%20\(DASH\)%20diet.](https://www.mayoclinic.org/diseases-conditions/high-blood-pressure/in-depth/high-blood-pressure/art20046974#:~:text=Eating%20a%20diet%20that%20is,Stop%20Hypertension%20(DASH)%20diet.)

Mayo Clinic Staff (2019, May 08). *DASH diet: Healthy eating to lower your blood pressure*.

<https://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/dash-diet/art-20048456>

Mayo Clinic (2018, May 12). *High blood pressure (hypertension)*.

<https://www.mayoclinic.org/diseases-conditions/high-blood-pressure/symptoms-causes/syc-20373410>

Mozaffarian D. (2016). Dietary and policy priorities for cardiovascular disease, diabetes, and obesity: A comprehensive review. *Circulation: Heart Failure*, 133, 187-225.

<https://doi.org/10.1161/CIRCULATIONAHA.115.018585>

Naseem, S., Ghazanfar, H., Assad, S., & Ghazanfar, A. (2016). Role of sodium-restricted dietary approaches to control blood pressure in Pakistani hypertensive population. *Journal of Pakistani Medical Association*, 66(7), 837-842.

National Committee for Quality Assurance (n. d.). *Controlling high blood pressure*.

<https://www.ncqa.org/hedis/measures/controlling-high-blood-pressure/>

National Heart, Lung, & Blood Institute (2006). *Your guide to lowering your blood pressure with DASH: DASH eating plan: Lower your blood pressure*.

<http://purl.access.gpo.gov/GPO/LPS70949>

National Heart, Lung, and Blood Institute (08, May 2020). *High blood pressure*.

<https://www.nhlbi.nih.gov/health-topics/high-blood-pressure#:~:text=For%20most%20adults%2C%20healthy%20blood,90%20mm%20Hg%20or%20higher.>

National Heart, Lung, and Blood Institute (n. d.). *DASH eating plan*.

<https://www.nhlbi.nih.gov/health-topics/dash-eating-plan>

National Institute of Diabetes and Digestive and Kidney Diseases (n. d.). *Kidney disease*.

<https://www.niddk.nih.gov/health-information/kidney-disease>

- Pallant, J. (2016). *SPSS survival manual: A step by step guide to data analysis using ibm spss* (6th ed.). Open University Press.
- Reed, J. E. & Card, A. J. (2016). The problem with plan-do-study-act cycles. *BMJ Quality & Safety*, 25, 147-152. <https://dx.doi.org/10.1136/bmjqs-2015-005076>
- Rifai, L., Pisano, C., Hayden, J., Sulo, S., & Silver, M. A. (2015). Impact of the dash diet on endothelial function, exercise capacity, and quality of life in patients with heart failure. *Baylor University Medical Center Proceedings*, 28(2), 151-156. <https://dx.doi.org/10.1080%2F08998280.2015.11929216>
- Rodriguez, M., Friedberg, J., DiGiovanni, A., Wang, B., Wylie-Rosett, J., Hyoun, S., & Natarajan, S. (2019). A tailored behavioral intervention to promote adherence to the DASH diet. *American Journal of Health Behavior*, 43(4), 659-670. <https://doi.org/10.5993/AJHB.43.4.1>
- Ros-Hellauer, T., Tennant, J., Banelyte, V., Gorogh, E., Luzi, D., Kraker, P., Pisacane, L., Ruggieri, R., Sifacaki, E., & Vignoli, M. (2020). Ten simple rules for innovative dissemination of research. *PLOS Computational Biology*, 16(4), e1007704. <https://doi:10.1371/journal.pcbi.1007704>
- Sadeghi, C., Khan, H. A., Tiemeier, A. J., & Bakhai, S. Y. (2019). Improving blood pressure control by optimization of guideline directed therapy for hypertension in a primary care setting: quality improvement project. *Journal of General Internal Medicine*, 34(2).
- Sany, S. B. T., Behzad, F., Ferns, G., & Peyman, N. (2020). Communication skills training for physicians improves health literacy and medical outcomes among patients with hypertension: A randomized controlled trial. *BMC Health Services Research*, 20(60), 1-10. <https://doi.org/10.1186/s12913-020-4901-8>

Serra, Allie (2021). [DASH diet]. [Photograph]. *Physical Solutions*.

<http://physicalsolutionsli.com/dash-diet/>

Sessoms, J., Reid, K., Williams, I., & Henton, I. (2015). Provider adherence to national guidelines for managing HTN in African Americans. *International Journal of Hypertension*. <https://pubmed.ncbi.nlm.nih.gov/26550489/>

Siervo, M., Lara, J., Chowdhury, S., Ashor, A., Oggioni, C., & Mathers, J. C. (2015). Effects of the dietary approaches to stop hypertension (DASH) diet on cardiovascular risk factors: A systematic review and meta-analysis. *The British Journal of Nutrition*, *113*(1), 1–15. <https://doi.org/10.1017/S0007114514003341>

Soltani, S., Arablou, T., Jayedi, A., & Salehi-Abargouei (2020). Adherence to the DASH diet in relation to all-cause and cause-specific mortality: a systematic and dose-response meta-analysis of prospective cohort studies. *Nutrition Journal*, *19*(37), 1-13. <https://doi.org/10.1186/s12937-020-00554-8>

Tam, H. L., Wong, E. M. L., & Cheung, K. (2020). Effectiveness of educational interventions on adherence to lifestyle modifications among hypertensive patients; an integrative review. *International Review of Environmental Research and Public Health*, *17*, 2513. <https://doi:10.3390/ijerph17072513>

Tiong, X. T., Nursara Shahirah, A., Pun, V. C., Wong, K. Y., Fong, A. Y. Y., Sy, R. G., & Venkataraman, K. (2018). The association of the dietary approach to stop hypertension (DASH) diet with blood pressure, glucose and lipid profiles in Malaysian and Philippines populations. *Nutrition, Metabolism, and Cardiovascular Diseases*, *28*(8), 856-863.

Whelton, P. K., Carey, R. M., Aronow, W. S., Casey, D. E., Collins, K. J., Himmelfarb, C. D., DePalma, S. M., Gidding, S., Jamerson, K. A., Jones, D. W., MacLaughlin, E., Muntner,

P., Ovbiagele, B., Smith, S. C., Spencer, C. C., Stafford, R. S., Taler, S. J., Thomas, R. J., Williams, K. A., & Wright, J. T. (2018).

2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA guideline for the prevention, detection, evaluation, and management of high blood pressure in adults: A report of the American college of cardiology/American heart association task force on clinical practice guidelines. *Journal of American College of Cardiology*, 71(19), e127-e248.

Wieners, E. (2019). *Developing a sustainability plan in a project proposal*.

<https://proposalsforngos.com/sustainability-plan-project-proposal/>

Won, T. C. (2015). Promoting DASH (Dietary approaches to stop hypertension) diet for newly diagnosed hypertensive patients in primary care setting: Challenges and interventions.

Annals of the Academy of Medicine Singapore, 44(10).

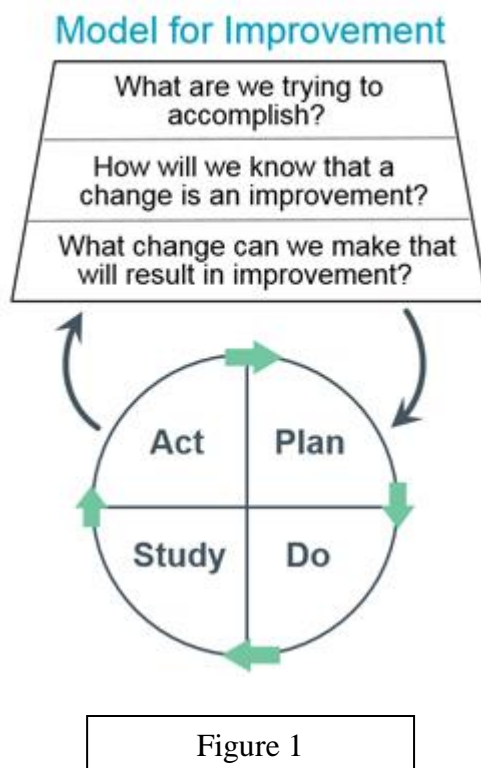
World Health Organization (2019). *Hypertension*. <https://www.who.int/news-room/fact-sheets/detail/hypertension>

Zellefrow, C. (2019). *The dnp project: goals and glitches*.

<https://stti.confex.com/stti/congrs19/webprogram/Paper98025.html>

Appendix A

PDSA Cycle



Source: <http://www.ihl.org/resources/Pages/HowtoImprove/default.aspx>

Appendix B

Mallu C Reddy MD

*1196 N. Park Avenue
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Phone (909) 623-4050
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March 1, 2021

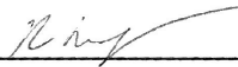
To Whom It May Concern:

DR. Andrea Hill

Dr. Alyssa Sturm

Touro University, Nevada

Ms. Sofia Editha S. Locquiao has permission to perform her DNP project at the Reddy Care Medical in partial fulfillment of her requirements for the Doctor of Nursing Practice at Touro University Nevada. An affiliation agreement of alignment is not required.



Ruth Reddy

Administrator

Appendix C

- Make consistent progress towards completion of the DNP Scholarly project/practicum and to keep the PM and Project Team updated on their progress through submission of appropriate weekly Meditrek logs and communication with all parties on an as needed basis.
- Complete all project/practicum course assignments in a timely manner.
- Reach out to the PM with questions and for support as needed.

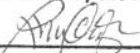
Responsibilities of the Academic Mentor and Project/Practicum Course Instructor

The Academic Mentor and Project/Practicum Course Instructor agree to:

- Maintain open communication with the PM and Student at all times.
- Schedule virtual meetings with the PM and Student at least once per session and as needed at other times.
- Review the weekly progress reports made by the student and identify and communicate issues that the committee must address.
- Support the student and the PM through availability and responsiveness to identified issues.

The overall DNP Project/Practicum experience is monitored and approved by the DNP Project/Practicum course instructor to meet the rigor and clinical requirements of said experience.

I agree to abide by the respective responsibilities stated above, both implicit and inferred.


11/24/20

 Signature of PM Date

RODOLFO PEREZ JR.

 Printed Name of PM Date

REDDY CARE MEDICAL CLINIC - NO CLINICAL AGREEMENT NEEDED

 Project/practicum Site Name

1196 N. PARK AVE. FONONA CA 91767

 Project/practicum Site Address

909 623 4050

 Project/practicum Site Phone Number

RUTH REDDY RUTH.REDDY@YAHOO.COM 

 Project/practicum Site Contact Person & Email Address


11/24/20

 Signature of Student Date

SOFIA EDITHA S. WILSON

 Printed Name of Student

Implementation of a Dietary Approach to Hypertension (DAPH) diet Protocol

 Title of DNP Scholarly Project/practicum in a Primary Clinic Setting - A Quality Improvement Project

 Signature of Academic Mentor Date

Appendix D

DASH Diet Educational Protocol

1. The medical assistant (MA) will take and record the vital signs of the eligible hypertensive patients in the Practice Fusion electronic health record (EHR).
2. If the BP is elevated, the MA will place the DASH diet handout in the patient's chart, a DASH diet education document, and a post-it to inform the healthcare provider of the elevated BP.
3. The healthcare provider (nurse practitioner, physician assistant, and physician) will determine the diagnosis of HTN and subsequently provide education regarding the importance of the DASH diet in HTN management by utilizing the DASH diet handout along with a list of its food groups and a copy given to the patients.
4. The healthcare provider will document in the patient's chart that the DASH diet handout, its food groups, and the DASH diet education was provided in the patient education document.
5. The MA will gather the DASH diet education documentation, check it for completeness, and add any necessary information into the patient's chart.
6. A follow-up appointment for the patient will be scheduled by the medical assistant in one month to reassess the BP.

Appendix E

Outline of the DASH Diet Educational Protocol Session for the Clinic staff and Healthcare providers

- I. Introduction
 - A. Background
 - B. Objectives
- II. Distribute DASH diet pre-education questionnaires/ Gather answered questionnaires
- III. Review of Hypertension (HTN)
- IV. Discussion of the DASH Diet/ distribution of DASH Diet handout
 - A. What is the DASH Diet?
 - B. DASH Diet food groups
 - C. Health benefits of the DASH diet in HTN management
- V. Discussion of DASH Diet Education Protocol
- VI. Strategies to get started on the DASH Diet
- VII. Distribute DASH Diet post-education questionnaires/ Gather answered questionnaires

DASH Diet Handout

D - dietary

A - approaches to

S - stop

H - hypertension

- emphasizes vegetables, fruits, and low-fat dairy foods
- moderate intake of whole grains, fish, poultry, and nuts

Standard DASH diet - contains up to 2,300 milligrams (mg) of sodium/ day

Lower sodium DASH diet - contains up to 1,500 mg of sodium/ day



Berkeley Life (2018)

Appendix F

DASH diet food groups:

6 - 8 daily servings of **Grains** - 1 slice bread, 1 ounce dry cereal, ½ cup cooked rice, pasta or cereal

4 - 5 daily servings of **Vegetables** - 1 cup raw vegetable, ½ cup cut-up raw or cooked vegetables

4 - 5 daily servings of **Fruits** - 1 medium fruit, ½ cup fresh, frozen, or canned fruit, 4 ounces of juice

2 - 3 daily servings of **Low-fat or fat-free dairy** - 1 cup milk, 1 cup yogurt, 1 ½ ounces of cheese

2 - 3 daily servings of **Fats and oils** - 1 teaspoon vegetable oil, 1 teaspoon soft margarine, 1 tablespoon mayonnaise

6 or fewer servings a day of **Lean meats, poultry, or fish** - 1 ounce cooked meats, poultry, or fish

5 a week or fewer servings of **Sweets** - 1 tablespoon sugar, maple syrup, or honey, 1 tablespoon jam or jelly

4 to 5 servings a week of **Nuts, seeds, beans** - 1/3 cup nuts, 2 tablespoons nut butter or seeds



Serra (2021)

Health benefits of DASH diet

1. Encourages intake of sodium reduced diet
2. Encourages intake of a variety of foods rich in nutrients such as potassium, calcium, and magnesium that help lower the blood pressure
3. Encourages intake of food which prevents osteoporosis, cancer, heart disease, stroke, and diabetes
4. Low in saturated fat, trans fat, and total fat
5. DASH diet is usually about 2,000 calories/ day which can help in weight loss

Created and adapted from:
 Berkeley Life (2018). [Heart plate]. [Photograph].
 Berkeley Life.
<https://www.berkeleylife.com/wellness/exercise/what-is-the-dash-diet/>
 National Heart, Lung, and Blood Institute (n.d.).
 DASH eating plan.
<https://www.nhlbi.nih.gov/health-topics/dash-eating-plan>
 Serra, Allie (2021). [Dash diet]. [Photograph].
 Physical Solutions.
<http://physicalsolutionsli.com/dash-diet/>

Appendix G

DASH Diet Education Documentation for the Healthcare providers

Patient's name:
Sex: Male
BP:

Date:
Female

DASH diet education provided.

- Sodium intake and HTN

Recommended sodium intake/ day: 2, 300 milligrams or less

- What does DASH stand for?

Dietary Approaches to Stop Hypertension

- What is the DASH diet?

- a. Healthy way of eating
- b. Aims to reduce sodium intake in diet
- c. Emphasizes intake of vegetables, fruits, and low-fat dairy foods

- Discussed the DASH diet food groups

- a. Grains
- b. Vegetables
- c. Fruits
- d. Low-fat or fat-free dairy
- e. Lean meats, poultry, fish
- f. Fats and oils
- g. Nuts, seeds, and beans
- h. Sweets

- Discussed health benefits of DASH diet in HTN management

- a. Healthy way of eating which emphasizes plant-based foods and low-fat intake
- b. Encourages reduced sodium intake of 2, 300 mgs or less which decreases BP
- c. Encourages to consume a variety of foods rich in nutrients such as potassium, calcium, and magnesium which lowers the blood pressure (BP)
- d. Prevents osteoporosis, cancer, heart disease, stroke, and diabetes due to the nutrients in the recommended food groups
- e. Foods are lower in calories which may result in weight loss such as the 2,000 calorie a day diet; the weight loss helps lower the BP

Appendix H

Pre-education DASH Diet Questionnaire for Clinic staff and Healthcare providers

Please read the following statements and check the appropriate column that corresponds to your answer.

	A) Completely agree	B) Somewhat agree	C) Not agree/ disagree	D) Somewhat disagree	E) Completely disagree
I am aware what DASH stands for					
I am aware of the food groups in the DASH diet					
I am aware of the health benefits of the DASH diet					
I understand the DASH diet					
I understand the DASH diet protocol.					

Appendix I

Post-education DASH Diet Questionnaire for Clinic staff and Healthcare providers

Please read the following statements and check the appropriate column that corresponds to your answer.

	A) Completely agree	B) Somewhat agree	C) Not agree/ disagree	D) Somewhat disagree	E) Completely disagree
I am aware what DASH stands for					
I am aware of the food groups in the DASH diet					
I am aware of the health benefits of the DASH diet					
I understand the DASH diet.					
I understand the DASH diet protocol.					

Appendix J

Implementation of Dietary Approaches to Stop Hypertension (DASH) Diet Protocol Power Point

<p>Implementation of Dietary Approaches to Stop Hypertension (DASH) Diet Protocol in a Primary Clinic Setting - A Quality Improvement Project</p> <p>Sofia Editha S. Locquiao Touro University, Nevada</p>	<p>Outline of DASH Diet Educational Protocol Session for the Clinic staff & Healthcare provider</p> <ul style="list-style-type: none"> • I. Introduction <ul style="list-style-type: none"> • A. Background • B. Objectives • II. Distribute DASH diet pre-education questionnaires/ Gather answered questionnaires • III. Review of Hypertension (HTN) • IV. Discussion of DASH diet/ Distribution of DASH diet Handout • V. Discussion of DASH diet Education Protocol • VI. Strategies to get started on the DASH diet • VII. Distribute DASH diet post-education questionnaires/ Gather answered questionnaires 	<p>Introduction</p> <ul style="list-style-type: none"> • A. Background <ul style="list-style-type: none"> - 82, 735 deaths in 2016 → related to high blood pressure - National Institutes of Health (NIH) → sponsored studies on DASH diet → showed it is a healthy way of eating due to reduced due to reduced sodium (Na) <p><small>Reference: America's Health Rankings, (n. d.); Mayo Clinic Staff (2019)</small></p>	<p>Introduction cont.</p> <ul style="list-style-type: none"> • B. Objectives <ol style="list-style-type: none"> 1. Formulate & implement an evidence-based DASH diet educational protocol for HTN patients for optimal BP control at the project site. 2. Conduct an evidence-based educational session for the clinic staff & healthcare providers about the importance of the DASH diet in the management of HTN one week prior to the implementation of the DASH diet educational protocol.
<p>Introduction cont.</p> <ul style="list-style-type: none"> • B. Objectives <ol style="list-style-type: none"> 3. The healthcare provider will educate eligible HTN patients regarding the importance of the DASH diet in HTN management. 4. A pre- & post-education DASH diet questionnaire will be distributed & answered by the clinic staff & healthcare providers to determine the effectivity of the DASH diet education provided. Patients will be given a handout on information regarding the DASH diet. 	<p>Introduction cont.</p> <ol style="list-style-type: none"> 5. The clinic staff & healthcare provider will be compliant with national standards for care pertaining to HTN management with the DASH diet educational protocol implementation. 	<p>Hypertension</p> <ul style="list-style-type: none"> • Also known as elevated blood pressure (BP) • Major risk factor for heart diseases • 5th leading cause of common chronic diseases in the U.S. <p><small>Reference: America's Health Rankings (n. d.)</small></p>	<p>Hypertension cont.</p> <ul style="list-style-type: none"> • Healthy BP < 120/ 80 mm Hg • Hypertensive adults → need a clear, detailed, evidence-based plan to reduce HTN <p><small>Reference: Whelton et al., (2018)</small></p>

Appendix J

Implementation of Dietary Approaches to Stop Hypertension (DASH) Diet Protocol Power Point

<p>DASH Diet</p> <ul style="list-style-type: none"> • DASH → Dietary Approaches to Stop Hypertension • Standard DASH diet - recommended Na intake/ day < 2,300 milligrams (mgs) or less • Lower sodium DASH diet - up to 1,500 mgs Na/ day <p>Reference: National Heart, Lung, & Blood Institute (NHLBI, 2006)</p>	<p>DASH Diet cont.</p> <ul style="list-style-type: none"> • Healthy way of eating • Aims to reduce sodium intake in a diet • Emphasizes intake of vegetables, fruits, & low-fat dairy foods <p>Reference: Mayo Clinic Staff (2019)</p>	<p>DASH Diet cont.</p> <ul style="list-style-type: none"> • DASH Diet Food Groups <ol style="list-style-type: none"> a. Grains b. Vegetables c. Fruits d. Low-fat or fat-free dairy e. Lean meats, poultry, fish f. Fats & oils g. Nuts, seeds, & beans h. Sweets <p>Reference: Mayo Clinic Staff (2019)</p>	<p>DASH Diet cont.</p> <ul style="list-style-type: none"> • Healthy way of eating → emphasizes plant-based foods & low-fat intake • Encourages reduced Na intake of 2,300 mgs. or less → decrease BP • Encourages consumption of a variety of foods rich in nutrients (K⁺, Ca, & Mg) → lowers BP <p>Reference: Mayo Clinic Staff (2019)</p>
9	10	11	12
<p>DASH Diet cont.</p> <ul style="list-style-type: none"> • Prevents osteoporosis, cancer, heart disease, stroke, & diabetes due to nutrients in recommended food groups • Foods are lower in calories → weight loss (2,000-calorie a-day DASH diet → Dietary Approaches to Stop HTN (lowers BP) <p>Reference: Mayo Clinic Staff (2019)</p>	<p>DASH Diet Education Protocol</p> <ol style="list-style-type: none"> 1. The medical assistant (MA) → take & record the vital signs of the eligible hypertensive patients in Practice Fusion electronic health record (EHR) 2. Elevated BP → MA will place DASH diet handout in patient's chart, DASH diet education document, & a post-it → inform healthcare provider of elevated BP 	<p>DASH Diet Educational Protocol cont.</p> <ol style="list-style-type: none"> 3. Healthcare provider (nurse practitioner, physician) → determine diagnosis of HTN & subsequently provide education → importance of DASH diet in HTN mgmt. utilizing the DASH diet handout → copy given to patient 4. Healthcare provider → document in patient's chart that the DASH diet handout, its food groups, & DASH diet education was provided in the patient education document 	<p>DASH Diet Educational Protocol cont.</p> <ol style="list-style-type: none"> 5. The MA → gather the DASH diet education documentation → check for completeness → add any necessary information into the patient's chart 6. MA → schedule patient F/U appointment in one month
13	14	15	16

Appendix J

Implementation of Dietary Approaches to Stop Hypertension (DASH) Diet Protocol Power Point

Strategies to get started on the DASH diet

- 1. Change diet gradually → eat only 1 or 2 servings of fruits/vegetables daily → add a serving at lunch or dinner
- 2. Reward successes & forgive slip-ups → reward self with a nonfood treat for accomplishments → rent a movie, get together with a friend

Reference: Mayo Clinic Staff (2019)

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Strategies to get started on the DASH diet cont.

- 3. Add physical activity → increase physical activity DASH diet + physical activity → more chances of lower BP
- 4. Get support if needed → trouble following diet → talk to PCP or dietician for tips to help stick with DASH Diet

Reference: Mayo Clinic Staff (2019)

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Questions?

Questions????

Questions????

Questions????

19

References

America's Health Rankings (n. d.). *High blood pressure*. <https://www.americashealthrankings.org/explore/annual/measure/Hypertension/state/ALL>

Mayo Clinic Staff (2019, May 08). *DASH diet: Healthy eating to lower your blood pressure*. <https://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/dash-diet/art-20048456>

20

References cont.

National Heart, Lung, & Blood Institute. (2006). *Your guide to lowering your blood pressure with DASH: DASH eating plan*. <http://pdf.heart.gov.gov/GPO:LPS09049>

Whelton, P. K., Carey, R. M., Anderson, W. S., Casio, D. E., Collins, K. J., Devereux, R. B., et al. (2014). *2014 ACC/AHA/AHA/ASPC/ASPC/PCNA guideline for the prevention, detection, evaluation, and management of high blood pressure in adults: A report of the American college of cardiology/American heart association task force on clinical practice guidelines*. *Journal of American College of Cardiology*, 71(5), e127-e148.

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