

Running head: ROLE OF HEALTH LITERACY IN HYPERTENSION

THE IMPLEMENTATION OF THE TEACH-BACK METHOD IN DASH DIET EDUCATION
TO IMPROVE BLOOD PRESSURE CONTROL IN PATIENTS WITH HYPERTENSION
AND LOW HEALTH LITERACY

A Scholarly Project

Submitted to the

Faculty of Liberty University

In partial fulfillment of

The requirements for the degree

Of Doctor of Nursing Practice

By

Patrice Helen Spencer

Liberty University

Lynchburg, VA

August, 2019

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Scholarly Project Chair Approval:

Cynthia Goodrich, EdD, MSN, RN, CNE, Chair. August 5, 2019

ABSTRACT

Low health literacy is closely correlated with poorly-managed chronic disease conditions. Hypertension is a common chronic disease condition which can be better controlled through compliance with the dietary approaches to stop hypertension (DASH) diet; however, patients with low health literacy may have difficulty understanding the DASH diet without proper education. The teach-back method is an evidence-based education tool which can empower patients with low health literacy to better control the management of hypertension through adherence to the DASH diet. This is an evidence-based project which purposes to reveal the effectiveness of the teach-back method in providing DASH diet education in improving blood pressure control and promoting dietary compliance for patients with hypertension and low health literacy. The teach-back method was implemented into the DASH diet education in an urgent care setting which did not already have any education method in place to address health literacy. The project leader conducted a 24-hour dietary recall interview and blood pressure measurement with the participants prior to the education and eight-weeks after the education to evaluate the effect of the intervention on dietary compliance and blood pressure management. The project revealed a significant decrease in participants' systolic blood pressure and slight decrease in diastolic blood pressure after the intervention. Additionally, participants displayed an overall increase in fruit and vegetable intake as well as a reduction in sodium intake after the intervention. The teach-back method can greatly influence patients' dietary compliance and subsequently can improve patients' management of chronic disease conditions such as hypertension.

Keywords: Teach-back method, health literacy, hypertension, DASH diet

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List of Abbreviations

Dietary Approaches to Stop Hypertension (DASH)

Health Literacy (HL)

Institutional Review Board (IRB)

Systolic Blood Pressure (SBP)

Diastolic Blood Pressure (DBP)

Newest Vital Sign (NVS)

Automated Self-Administered 24-hour Dietary Assessment Tool (ASA24)

24-hour Dietary Recall (24HR)

SECTION ONE: INTRODUCTION

Health literacy is a significant barrier to patients achieving optimal health in the United States and worldwide. Nine out of 10 individuals experience difficulty with understanding and utilizing health information filled with medical jargon (Center for Disease Control and Prevention, 2016). Low health literacy is associated with higher rates of mortality, frequent emergency room visits, less usage of preventative services, increased hospital admissions, and poorly-controlled chronic medical conditions (U.S. Department of Health and Human Services, n.d.). Health literacy has economic implications as well, as the estimated expense of low health literacy is up to \$238 billion annually (Alper et al., 2018). One in three Americans have high blood pressure, and only half of patients with hypertension have the disease under control (Center for Disease Control and Prevention, 2016).

Strictly following the Dietary Approaches to Stop Hypertension (DASH) diet has been proven to be an effective intervention to reduce blood pressure (Saneei, Salehi-Abargouei, Esmailzadeh, & Azadbakht, 2014). In fact, studies have shown the DASH diet can reduce systolic blood pressure by 10 points within 12 weeks (Saneei, Salehi-Abargouei, Esmailzadeh, & Azadbakht, 2014). Unfortunately, low health literacy can be an obstacle for patients to abide by the DASH diet and achieve blood pressure control (Shi, Wang, Wang, Liu, Shi, Zhang, & Chen, 2017). The teach-back method is an evidence-based health literacy intervention which promotes patient-centered care, encourages patient compliance, improves quality of care, empowers patients, and promotes positive patient outcomes (Agency for Healthcare Research and Quality, n.d.). Implementing the teach-back method in DASH diet education for hypertensive patients can promote patient understanding, benefit lifestyle compliance, and

ultimately improve blood pressure control (Jones, Forouhi, Khaw, Wareham, & Monsivais, 2018; Dinh, Bonner, Clark, Ramsbotham, & Hines, 2016).

Background

Health literacy is defined as the level that an individual is capable of obtaining, communicating, processing, and understanding health information to make informed health decisions (Center for Disease Control and Prevention, 2016). Similarly, nutrition literacy refers to the capacity of an individual to interpret nutrition information and make appropriate nutrition decisions (Gibbs et al., 2018). Health literacy is not a new or foreign concept to healthcare. In fact, health literacy was first introduced in the 1970s, and subsequently, there has been much research conducted and implemented to address limited health literacy in the United States (Muhanga & Malungo, 2017). This growing body of evidence has found a clear correlation between low health literacy and poor health outcomes (Muhanga & Malungo, 2017). According to the National Assessment of Adult Literacy, only 12% of adults are classified as having proficient health literacy, and 14% of adults have below basic health literacy (U.S. Department of Health Services, n.d.). Individuals of low income, low educational status, older age, minority of race and ethnicity, and poor health status are most likely to have low health literacy (U.S. Department of Health Services, n.d.).

Patients with low health literacy are more likely to have chronic health conditions that are not managed well (U.S. Department of Health and Human Services, n.d.). Hypertension is a common and harmful chronic disease condition which is growing in prevalence in the United States, with approximately 75 million diagnosed cases currently in the United States (Center for Disease Prevention and Control, 2018). Uncontrolled hypertension can contribute to the two leading causes of death in the United States: heart disease and stroke (Center for Disease

Prevention and Control, 2018). Modifiable risk factors for hypertension include physical inactivity, unhealthy diet high in sodium, obesity, alcohol overuse, concurrent chronic health conditions, smoking, and stress (American Heart Association, 2017). Low nutrition literacy has been found to be a strong predictor of poor dietary decisions, which can increase one's risk for uncontrolled hypertension (Gibbs et al., 2018). Complying to the DASH diet has the capability of improving blood pressure control and overall health of individuals (Juraschek, Miller, Weaver, & Appel, 2017). The DASH promotes dietary intake that is high in fruits and vegetables and low in saturated fat and sodium (Juraschek, Miller, Weaver, & Appel, 2017). The DASH diet originated in 1997 when a study revealed a significant improvement in patients' blood pressures who had an intake in fruits, vegetables, low-fat dairy, and reduced saturated fat within an eight-week period (Appel et al., 1997).

Healthy People 2020 has a goal to improve the control of hypertension to 61.2% by 2020, as from 2005-2008 the estimated percentage was 43.7% (Office of Disease Prevention and Health Promotion, 2016). The Institute of Medicine (2004) proposes health literacy is an essential measure of quality care and encourages health care systems to consider every patient's health literacy when providing education and promoting clear, understandable communication. Additionally, the National Action Plan for Health Literacy presents the dissemination of existing communication tools and resources as one of the key strategies necessary to improve health literacy nationally (U.S. Department of Health and Human Services, 2010). The teach-back method is an effective evidence-based method in which health education is presented in stages, and the patient summarizes their understanding of the education in their own words (Agency for Healthcare Research and Quality, 2015). The Institute of for Healthcare Improvement (2019) recommends providers to utilize the teach-back method with all patient education, regardless of

one's health literacy as the teach-back method provides clear communication and evaluates patients' comprehension of the education. Studies have shown the teach-back method to be an effective means to improve health literacy, and, therefore, promote better control of patients' chronic diseases (Dinh, Bonner, Clark, Ramsbotham, & Hines, 2016).

Problem Statement

Low health literacy negatively impacts patients physiologically, psychosocially, and economically (Chesser, Woods, Smothers, & Rogers, 2016). Hypertension is a prevalent health condition which must be controlled in the United States as uncontrolled hypertension can result in detrimental health outcomes (Center for Disease Prevention and Control, 2018). One modifiable risk factor to hypertension is nutrition through abiding by the DASH diet; however, patients with low health literacy may not be properly equipped to abide by these dietary recommendations (Juraschek, Miller, Weaver, & Appel, 2017). Complying to the DASH diet can be a challenge for patients with low health literacy, as the diet requires interpreting food labels and measuring serving sizes in order to implement the dietary recommendations. Healthcare workers have a crucial role to play in implementing evidence-based strategies to promote health literacy and thus empower patients to better control their health conditions (Chesser, Woods, Smothers, & Rogers, 2016).

Purpose of the Project

The purpose of this project is to utilize the teach-back method when providing education on the DASH diet to promote blood pressure control for patients with hypertension and low health literacy. This project seeks to promote health equity and decrease health disparities through addressing the challenges of low health literacy. This project provides insight into the relationship among health literacy, nutrition, and blood pressure control. Furthermore, the

project validates the use of an evidence-based health literacy screening tool known as the Newest Vital Sign (NVS) to evaluate patients' health literacy and reveals the use of the Automated Self-Administered 24-hour Dietary Assessment Tool (ASA24) to evaluate patients' dietary compliance.

Clinical Question

Will providing DASH diet education through utilizing the teach-back method (I) for patients with low health literacy and hypertension (P) improve their blood pressure control and dietary compliance (O) compared to their blood pressure and dietary choices prior to the intervention (C) over an eight-week period (T)?

SECTION TWO: LITERATURE REVIEW

Search Strategy

The project leader utilized a systematic process for the search, selection, critical appraisal of evidence, and synthesis of the evidence to support this project. The review of the literature yielded rich evidence-based data exposing the correlation between health literacy and nutrition decisions, ensuring the effectiveness of the DASH diet with blood pressure control, and promoting the effectiveness of the teach-back method. The project leader performed a computer-assisted search of databases to perform the literature review for this project. The databases searched include Medline Plus, CINAHL, ProQuest, EBSCOhost, Cochran Database of Systematic Reviews, and National Guideline Clearinghouse. Parameters of the search included peer-reviewed articles published in the English language within the past five years. Keywords and phrases which were utilized for the search include *health literacy*, *health literacy interventions*, *nutrition education*, *teach-back method*, *hypertension*, *health literacy and*

hypertension, health literacy and nutrition, nutrition and hypertension, DASH diet, and health literacy and patient outcomes.

The literature included was based on the pertinence to the project, patient population, intervention performed, and outcomes measured. The project leader included the studies which focused on patients with chronic health conditions and low health literacy as well as articles with the main interventions of utilizing the teach-back method and performing nutrition education due to relevance to the project. Additionally, the project leader included the literature which revealed the outcomes of positive blood pressure control with DASH diet, improvement of health literacy from the teach-back method, and correlation between nutrition and blood pressure in the review. Furthermore, the project leader selected the most recent evidence, only including articles published within the past five years.

Critical Appraisal

After applying the inclusion criteria and reviewing the literature, the project leader selected, synthesized, and appraised 15 articles through utilizing the Melnyk Level of Evidence Pyramid (Melnik & Fineout-Overholt, 2015). This pyramid categorizes evidence from Level I-VII with level I articles denoting the strongest evidence and level VII denoting the weakest. This literature review consists of various types and levels of studies to provide a well-rounded body of evidence. The literature consists of one systematic review and meta-analysis of randomized-controlled trials (Level I), two clinical guidelines based on systematic reviews (Level I), one randomized-controlled trial (Level II), one cohort study (Level IV), one case-control study (Level IV), four systematic reviews of quantitative and qualitative studies (Level V), and four descriptive studies (Level VI).

Synthesis

This body of literature provides a great evidence-base for the project. Within the literature review, significant evidence reveals a direct correlation between low health literacy and poor patient outcomes. There is a relationship between low health literacy and poor nutrition, and a lack of food label use is correlated with poor nutrition decisions (Malloy-Weir & Cooper, 2017; Cha et al., 2014). Adherence to the DASH diet can reduce blood pressure even as significantly as six mmHg systolic in as little as four weeks as well as reduce the risk of cardiovascular disease and stroke (Jones et al., 2018; Saneei et al., 2014). Understanding the DASH diet requires proficiency in health and nutrition literacy; thus, patients with low health literacy need to be educated effectively. The utilization of nutrition literacy assessment tools such as the Newest Vital Sign can accurately identify patients with low health literacy and provide insight into their dietary decisions (Gibbs et al., 2018; Shealy & Threatt, 2016). When comparing the teach-back method to standard education methods, patients educated with the teach-back method scored significantly better than in the post-education tests (Matthew et al., 2017). The teach-back method has not only been shown to be one of the most effective education tools to improve health literacy, but also the teach-back method promotes improvement in the management of many chronic diseases, including hypertension (Dantic, 2014; Dinh et al., 2016; Liu, Li. Liu, & Chen, 2018; Matthew et al., 2017). Guidelines for health literacy strongly recommend utilizing the teach-back method for every patient encounter, and clinical guidelines for managing hypertension include recommendations to utilize health literacy methods when providing hypertension education (Shator et al., 2016; Whelton et al., 2017).

Conceptual Framework

This project utilized the Iowa Model of Evidence-Based Practice as the conceptual framework. The Iowa model is a widely utilized evidence-based practice model that was formulated in the 1990s by nurses and serves to provide a framework for the dissemination and implementation of evidence-based practice (Iowa Model Collaborative, 2017). The first step of the Iowa model is identifying a trigger issue or opportunity for improvement (Iowa Model Collaborative, 2017). In an outpatient clinic which services underserved populations, this project leader noted the significant number of patients with low health literacy, poor nutrition, and uncontrolled chronic diseases. The second step requires stating the question or purpose which can be formulated through population, intervention, comparison, outcome, and time (PICOT). The PICO question is, “Will providing DASH diet education through utilizing the teach-back method (I) for patients with low health literacy and hypertension (P) improve their blood pressure control and dietary compliance (O) compared to their blood pressure and dietary choices prior to the intervention (C) over an eight-week period (T)?” At this point in the model, the project leader is encouraged to evaluate if this topic is a priority. Implementing an evidence-based education tool for health promotion in patients with low health literacy is certainly a priority. The next step requires formulating an interdisciplinary team to assist in the reviewing of literature, identifying stakeholders, and engaging the community. The staff at the pilot study setting were the main stakeholders who were engaged in this project. Subsequently, the project leader assembles, appraises, and synthesizes the current body evidence to discern whether there is quality evidence to back up the evidence-based intervention (Iowa Model Collaborative, 2017). After evidence has been gathered and processed, the project leader plans the design and pilot of the project which involves engagement of patient preferences, assessment of necessary

resources, development of protocol, formulation of an evaluation plan, collection of data, development of an implementation plan, preparation of clinicians, promotion of adoption, and collection of post-pilot data (Iowa Model Collaborative, 2017). The project leader conducted the pilot project at an urgent care and family practice clinic which provides care for many patients with hypertension who have low health literacy. After evaluating the results of the pilot study, an assessment must be performed on whether this intervention is ready for adoption. Integrating and sustaining the practice change requires identifying and empowering the individuals who can carry out the change, integrating the change into the culture of the organization, continuing to measure the improvements, and reinforcing the change (Iowa Model Collaborative, 2017). Lastly, the results of the project are being disseminated through publication in the Digital Commons as well as potentially presenting in professional conferences and submitting to a professional journal. The project leader obtained permission to use the Iowa Model, and the acceptance letter can be found in the appendices.

Summary

Hypertension is a serious condition which can be improved through implementing the DASH diet (Saneai et al., 2014). The review of literature reveals the implementation of the teach-back method can greatly improve patients' comprehension of nutrition education and promote better patient outcomes for patients with hypertension (Dinh et al., 2016). Educating patients on the DASH diet through utilizing the teach-back method can help patients with hypertension achieve blood pressure control. Through utilizing the teach-back method to promote the DASH diet in patients with hypertension and low health literacy, healthcare workers can help patients make informed nutritional decisions resulting in a reduction in their blood pressure.

SECTION THREE: METHODOLOGY

Design

This is an evidence-based practice project which utilizes the Iowa Model of Evidence-Based Practice. One of the steps of the Iowa Model to successfully translate evidence to practice is conducting a pilot study (Iowa Model Collaborative, 2017). This project utilizes a quasi-experimental design to gather and analyze data and assesses the relationships among low health literacy, poor nutrition, and uncontrolled hypertension (Mateo and Foreman, 2014). Patients with hypertension completed a health literacy screening tool called the Newest Vital Sign. The project leader evaluated if patients met inclusion criteria, obtained informed consent, and subsequently conducted a 24-hour dietary recall (24HR) interview. The nursing staff measured the participants blood pressure on that initial office visit during the check-in process. The project leader performed DASH diet education with utilization of the teach-back method. Lastly, the project leader instructed participants to follow-up in eight-weeks with a post-intervention 24HR interview and blood pressure measurement in the office. The project leader compared pre- and post- 24HR and in-office blood pressure results to determine the influence of the intervention on the outcomes. In the cases where patients were unable to follow-up, the project leader conducted a phone interview to gather the post- 24HR and assess home blood pressure reading.

Measurable Outcomes

The project utilized two measurements to evaluate outcomes: blood pressure and the 24HR. The blood pressure was measured in-office before and after the intervention to determine the effects of the intervention, or at home after the intervention depending on the patients' follow-up method. The 24HR is a dietary recall method which provides the patients dietary choices within the past 24-hour time frame. The Automated Self-Administered 24-hour Dietary

Assessment Tool (ASA24) is a technology which translates the 24-hour dietary choices into meaningful nutritional information through analyzing the amount of dairy, grains, fruits, vegetables, lean meats, and sodium intake. The project leader utilized the ASA 24 to analyze the 24HR and compare patients' dietary intake to the DASH diet recommendations. The 24HR provided insight into the dietary choices of patients before and after the intervention to determine if the DASH diet education through the teach-back method successfully promoted dietary compliance. In the event where participants did not follow-up properly, the project leader conducted a phone interview to collect the post-intervention 24HR and home blood pressure results.

Setting

The project leader conducted this project at an urgent care and family practice clinic in a rural community. This clinic is both a family practice and urgent care private practice stationed in a town with a population of 13,445. The clinic provides care for many patients with hypertension, poor nutrition, and low health literacy. Due to the fast-paced nature as an urgent care facility, it is easy for patient education to become rushed without a true assessment of the patients' understanding of proper disease management. Furthermore, studies show that 40-80% of the education patients receive during office visits is forgotten right away, and approximately half of the knowledge is remembered incorrectly (AHRQ, 2015). This clinic needed to implement a health literacy tool during patient education to ensure patient safety and quality of care. The organization is committed to providing quality patient care and promote chronic disease prevention and management. The clinic was already printing out an education pamphlet on the DASH diet for all patients with hypertension, but the clinicians and nurses relied on the printed education material rather than providing thorough education on this diet. Implementing

the teach-back method for DASH diet education is a time-efficient means to promote health literacy and improve the management of patients with hypertension. This clinic is constantly looking for ways to implement evidence into practice to promote improvement in patient quality care and was supportive of this project. A letter of acceptance is provided by the director of the clinic in the Appendices.

Population

Patients with hypertension and low health literacy are at risk for poor health outcomes; thus, efforts must be made to promote health in this population. This project utilized convenience sampling through only including patients of the clinic. The sample included patients who have been diagnosed with hypertension as defined by the American College of Cardiology as systolic blood pressure (SBP) greater than 130 or diastolic blood pressure (DBP) greater than 80 and low health literacy as determined by the Newest Vital Sign health literacy screening tool (Whelton et al., 2018). Other inclusion criteria were age 18 years or older, English speaking, and not at blood pressure goal. Patients were excluded if they have been diagnosed with resistant hypertension, had a blood pressure medication change during the initial visit or throughout the eight weeks of the project, or were cognitively impaired and unable to provide accurate information to ensure validity. The patients who completed the pre- and post-24HR and follow-up with measurement of their blood pressure in-office or through phone interview within eight weeks were included in the project. 18 participants were enrolled in the project; however, six of those did not follow-up, thus, 12 participants were included in the project.

Ethical Considerations

To ensure the protection of human subjects in this project, the project leader and her Project Chair have completed research ethics training. The project leader received approval for this project from the Institutional Review Board (IRB) prior to conducting the project. The project leader provided every potential participant with full disclosure on the details of the project and conducted informed consent with every participant. A copy of the IRB approval letter, the Collaborative Institutional Training Initiative (CITI) Certificate, and the informed consent form is provided in the Appendices.

Data Collection

The nurses identified patients who have a documented diagnosis of hypertension and a blood pressure reading higher than the goal blood pressure (SBP above 130 or DBP above 80) during the check-in process and notified the project leader. The project leader went through the Newest Vital Sign (NVS) interview with the patient, assessed if the patient met inclusion criteria, and obtained informed consent from the patient. The project leader then obtained a 24-hour dietary recall from the patient through an interview. The project leader proceeded with the actual intervention, which was providing the DASH diet education through the teach-back method. The project leader scheduled a follow-up appointment with each participant in eight weeks. During the follow-up appointment, the project leader obtained a post-intervention blood pressure measurement and conducted a post-intervention 24HR interview. The project leader subsequently inputted the 24-hour dietary recall data into the Automated Self-Administered 24-hour Dietary Assessment Tool database (ASA24). The project leader was responsible to follow-up with participants who were unable to come into the clinic through telephone conference, in

which the patient provided the post-24HR information and post-intervention blood pressure taken at home.

Tools

The project leader utilized the NVS scale and a 24-hour diet recall assessment through the ASA24 for the project. The NVS is a questionnaire which contains six questions regarding an ice cream label to assess aspects of health literacy, including numeracy, prose, and document literacy (Linnebur & Linnebur, 2018). Numeracy is tested through asking patients to calculate the number of calories are in a serving of ice cream (Linnebur & Linnebur, 2018). Prose literacy is evaluated through patients reading and comprehending the nutrition label and determining if they can eat it based upon the restrictions (Linnebur & Linnebur, 2018). Document literacy is examined through asking patients to determine if they are able to eat the ice cream based on the amount of saturated fats they have already eaten that day (Linnebur & Linnebur, 2018). Correct answers are scored as one and incorrect answers are scored as zero, thus, the range of possible scores can be from zero to six. A score between zero to one suggests high likelihood of low health literacy, a score between two to three suggests a possibility of low literacy, and a score between four to six suggests adequate literacy (Linnebur & Linnebur, 2018). In this project, patients who scored three or less were included as participants. The NVS has been validated as an accurate and reliable evidence-based tool to screen for health literacy by multiple studies. A systematic review found 23 studies which utilized NVS to assess health literacy, and several of those studies showed a correlation between health literacy as measured by NVS and health outcomes (Shealy & Threatt, 2016). NVS has been utilized with a variety of patient demographics in many healthcare settings and is comparable to other validated assessment tools for health literacy (Shealy & Threatt, 2016). NVS yields the best results when administered as

an interview to minimize the barriers of collecting patients' responses with accuracy. The interview takes approximately 10 minutes to complete. NVS is made available to the public for use and does not require permission to be obtained for this project. A picture of the NVS tool is provided in the Appendices.

A 24-hour dietary recall (24HR) captures detailed information about one's dietary consumption on a given day (Shim, Oh, & Kim, 2014). A 24HR typically entails conducting an interview with a patient and assessing detailed self-reported food and beverage consumption within a 24-hour time, commonly from midnight to midnight. Studies have shown 24HR is a time-efficient nutrition assessment strategy which has great validity and reliability in reflecting patients' dietary habits (National Cancer Institute, 2018). Furthermore, 24HR requires minimal health literacy as there is no reading, writing, or comprehension necessary for patients to participate (Shim, Oh, & Kim, 2014). The Automated Self-Administered 24-hour Dietary Assessment Tool (ASA24) was designed by the National Cancer Institute in 2005 and has subsequently been utilized in many studies to evaluate dietary compliance of subjects (National Cancer Institute, 2018). The tool was formatted from the United States Department of Agriculture's Food and Nutrient Database for Dietary Studies and has been validated in many studies (National Cancer Institute, 2018). The ASA24 utilizes internet technology to collect 24HR data in a simple and concise way and compute the data to specific nutritional data (National Cancer Institute, 2018). The ASA24 takes the participant through a series of prompts to ensure the food and beverages are accurately recorded; however, for this project, the patients were interviewed, and the project leader completed the ASA24 to minimize barriers of data collection due to low health literacy (National Cancer Institute, 2018). Subsequently, the ASA24 reveals the amount of dietary nutrients the subject has ingested that day, including the percentage

of dairy, grains, fruits, vegetables, fats, sodium, and calories (National Cancer Institute, 2018).

The project leader utilized the ASA24 to collect and analyze DASH diet compliance of the participants before and after DASH diet education with use of the teach-back method. In utilizing the 24HR prior to intervention and after the education, the project leader assessed participants understanding and compliance of the DASH diet based on the education provided with the teach-back method. The project leader obtained permission from the National Cancer Institute for use of the ASA24, and a copy of permission to use the tool is provided in the Appendices.

Intervention

The intervention implemented was the utilization of the teach-back method in DASH diet education for patients with hypertension and low health literacy. Prior to implementing the intervention, the project leader conducted a meeting with the staff members at the clinic. This meeting discussed the project details, and the nurses' role in the project. The nurses were trained to properly identify a documented diagnosis of hypertension for patients during check-in through utilizing the medical record system or paper chart. Nurses were also trained on accurate methods to measure blood pressure to ensure the validity of the pre-intervention blood pressure measurement.

The nurses notified the project leader of patients with a diagnosis of hypertension whose blood pressure was not at goal. The project leader identified the patients which met inclusion criteria and then administered the NVS as an interview to those patients. Patients were identified as potential participants of the project based upon their literacy score according to the NVS. Patients were asked for permission to participate in this project and were provided with informed consent. The participants who consented were then interviewed on their 24-hour diet recall by

the project leader. The project leader then provided DASH diet education with the teach-back method. The project leader taught the patient the aspects of DASH diet from the education pamphlet the organization prints out for patients with hypertension. For the teach-back method, the project leader utilized the guidelines on the teach-back method from Agency for Healthcare Research and Quality (2015), which include presenting information in stages and implementing teach-back throughout the education. Throughout the education, the project leader asked participants to summarize their comprehension of the teaching in their own words. The project leader scheduled a follow-up appointment with each participant within eight weeks for re-evaluation of in-office blood pressure and the post-24HR. In the event that participants were unable to follow-up with an office appointment, the project leader conducted a phone interview to perform the post-24HR interview and obtain a home blood pressure reading. The project leader entered the pre- and post-24HR data into the ASA24 to evaluate DASH diet compliance and entered the pre- and post- blood pressure into an Excel spreadsheet.

Timeline. The project leader received approval from the Project Chair and IRB before the project commenced. The organization provided a letter of acceptance toward adopting the project within the first month of proposal. The project leader educated nurses at the organization on identifying patients with a diagnosis of hypertension and notifying the project leader for potential participants one week prior to starting the intervention. The project leader recruited potential participants over a three-week period. The project leader conducted follow-up appointments with participants within eight weeks after the intervention and collected, synthesized, and evaluated the results within one month after completing the intervention.

Feasibility analysis. This project demanded time and resources. The organization must be willing for the patient encounter for participants to last longer than the usual visits, as

additional time was needed to administer the surveys and provide education with the teach-back method. Patients often experience a waiting time for the provider or for additional tests to be performed; thus, the project leader utilized participants waiting time to conduct the project to avoid interrupting patient flow. Additionally, there was an extra room in the clinic which the project leader utilized to conduct the intervention with the patient if the providers had completed the patients' discharge to improve patient flow. This project did not place a demand financially as the facility had the resources and personnel necessary to perform the intervention. The potential financial benefits of this project included improvement in disease control, improvement in patient outcomes, decrease in re-visits to the office and hospitalizations, improvement in patient satisfaction, and decrease in patient mortality. Potential barriers to obtaining accurate results included improper follow-up from participants, external variables influencing participants' blood pressure, participant non-compliance with the DASH diet despite appropriate education, and limited time to observe the full benefit of the intervention. To ensure proper follow-up with patients, the project leader set up a phone conference with participants who were unable to follow-up in-office to assess the 24-hour dietary recall and home blood pressure reading. Combining the results of participants with in-office blood pressure readings and patients with home blood pressure readings may have caused some variability in the outcomes, which may be considered a limitation. To address this limitation, the project leader educated all participants on the proper techniques to accurately measure their blood pressures at home.

Data Analysis

Measurable outcome 1. The project leader reviewed in-office or at-home blood pressure results before and eight weeks after the intervention. The project leader utilized Excel to compare and analyze the difference in participants' blood pressure before and after the

intervention. Through Excel, the project leader conducted a one-tailed paired samples t-test to assess a statistically significant difference in the pre-intervention and post-intervention systolic and diastolic blood pressure measurement.

Measurable outcome 2. The project leader assessed the dietary compliance of participants through collecting the 24HR and computing the data into the ASA 24 before and eight weeks after the intervention. The project leader then compared the percentage of dietary intake from the ASA24 with the National Heart, Lung, and Blood Institute's DASH diet recommendations for measurement on the compliance of the DASH diet. The project leader utilized Excel to compare the pre-intervention and post-intervention results through performing a one sample t-test and a paired t-test. The results seek to identify if teach-back promoted DASH diet compliance and subsequently improved the participants' blood pressure.

SECTION FOUR: RESULTS

A total of 18 participants completed the NVS, pre-intervention 24-hour dietary recall, pre-intervention blood pressure, and teach-back method education. Of those 18 participants, 12 participants followed-up with a post-blood pressure and post-intervention 24-hour dietary recall; thus, 12 participants were included in the project (N=12). Six (50%) of the participants conducted the follow-up appointment in the office, while the other six (50%) participants provided the follow-up information over a telephone conference. The assumptions for the t-test performed are as follows: the level of measurement is numeric, the observations are independent of each other, the dependent variables have a normal distribution, the variance and standard distributions are approximately equal, and the dependent variables do not have significant outliers. A data analyst was consulted to ensure the validity of the data analysis.

Descriptive Statistics

Of the 12 participants, 67% of the sample were females and 33% were males ($N=12$, female=8, male=4). Two participants were under 50 (17%), two participants were 50-59 (17%), two participants were 60-69 (17%), five participants were 70-79 (41%), and one participant was older than 80 (8%). Four of the participants (33%) were not taking blood pressure medications, while the other eight participants (67%) were taking medication. None of the participants had a change in their blood pressure medication regimen throughout the eight weeks. As for health literacy scores according to the NVS, two of the participants (17%) scored three points, four participants (33%) scored two points, three participants (25%) scored one point, and three participants (25%) scored zero points. There were four out of 16 participants (25%) who scored above three points on the NVS thus disqualifying them from participating in the project.

Measurable Outcome 1

The first measurable outcome of the project is the difference between systolic blood pressure (SBP) before and eight-weeks after the intervention and difference in diastolic blood pressure (DBP) before and eight-weeks after the intervention. The project leader conducted a one-tailed paired samples t-test through Excel to compare the pre-intervention blood pressure readings with the post-intervention blood pressure readings. There was a statistically significant difference between the pre-intervention systolic blood pressures with a mean (M) of 149.5 mmHg and standard deviation (SD) of 11.84 mmHg and post-intervention systolic blood pressures ($M=129.7$ mmHg, $SD=21.9$ mmHg); $t(11)=-3.17$ with a p-value of 0.003. The minimum difference in SBP - 33 mmHg and the maximum difference was 41 mmHg, with a range of 74 mmHg; thus, the greatest increase in SBP post-intervention was 33 mmHg, whereas, the greatest decrease in SBP post-intervention was 41 mmHg. The average decrease in SBP was

20 mmHg. Significantly, 11 out of 12 participants (91.7%) had an overall decrease in systolic blood pressure (See *Figure 1*). There was not a significant difference between the pre-intervention diastolic blood pressures ($M=81.4$, $SD=12.2$) and the post-intervention diastolic blood pressures ($M=76.8$, $SD=9.6$); $t(11)=-1.72$ with a p-value of 0.05; however, there was an overall decrease in diastolic blood pressure with an average decrease of 5 mmHg. The minimum difference in DBP was -8 mmHg and the maximum difference was 19 mmHg, with a range of 27; thus, the greatest increase in DBP was 8 mmHg and the greatest decrease was 19 mmHg. Nine out of the 12 participants (75%) experienced a decrease in diastolic blood pressure (See *Figure 2*).

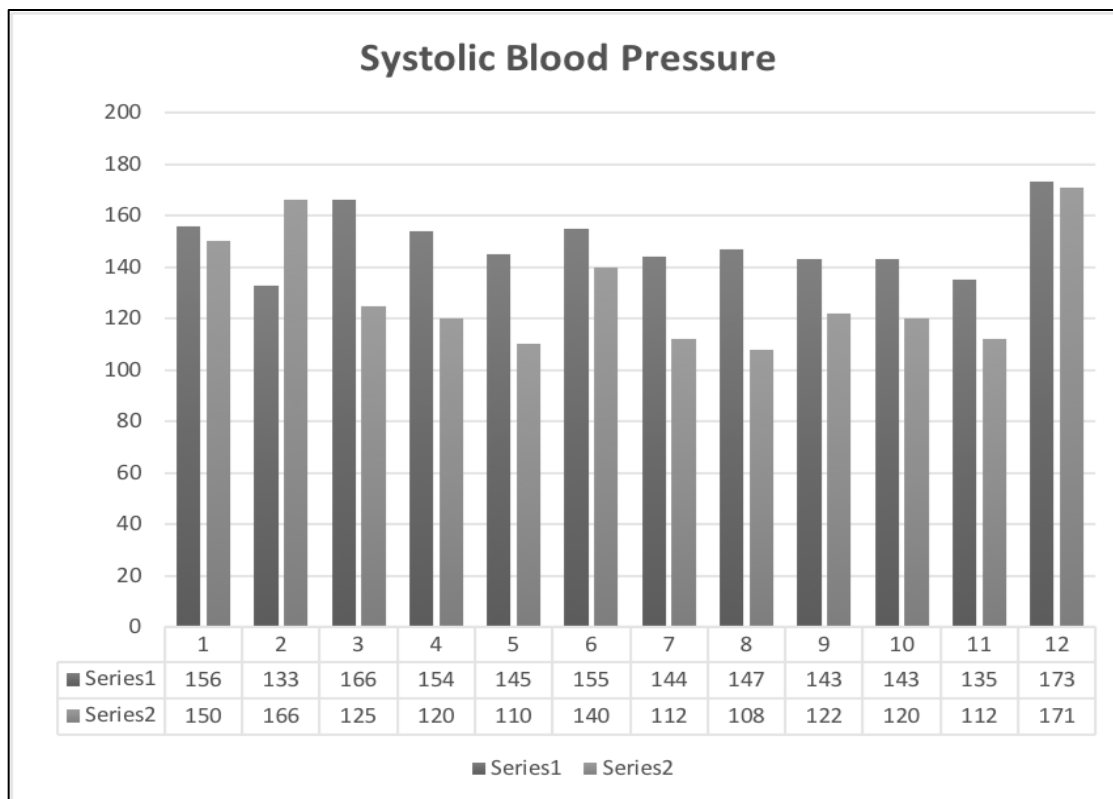


Figure 1. Difference in pre- and post-intervention systolic blood pressure

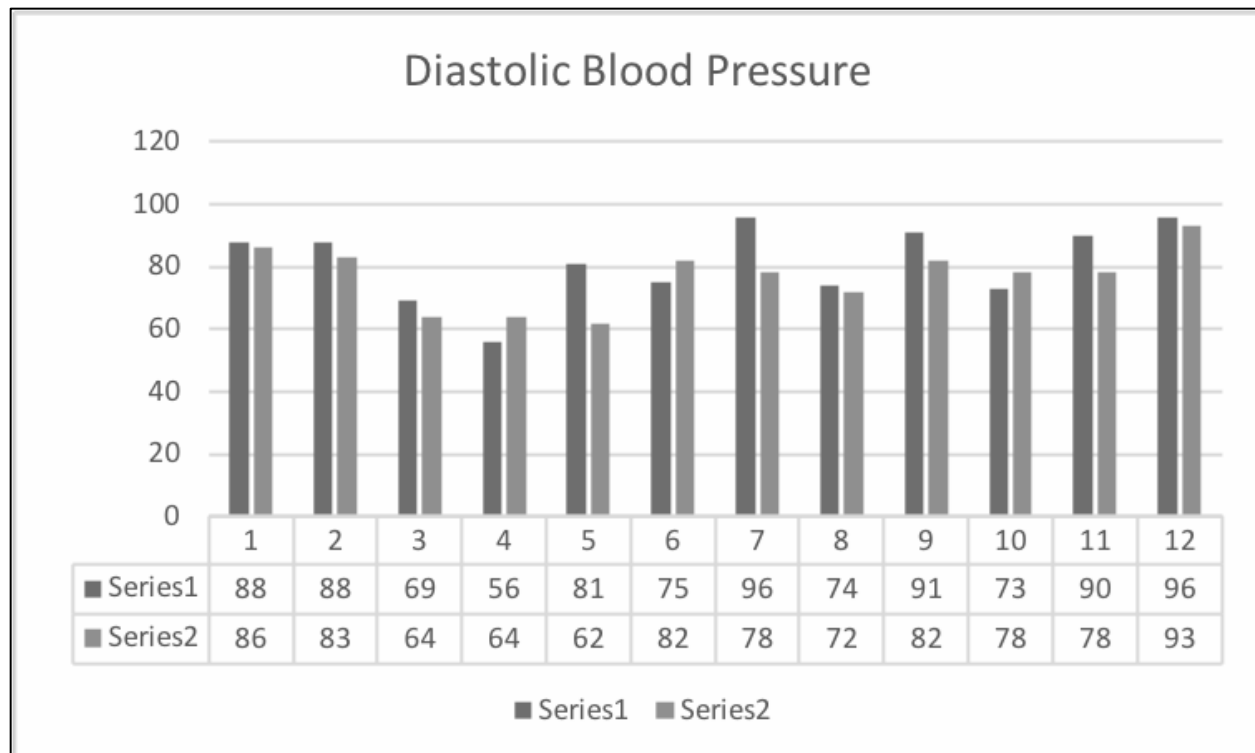


Figure 2. Difference in pre- and post-intervention diastolic blood pressure

Measurable Outcome 2

The second measurable outcome of the project is the difference between nutritional intake prior to the intervention and eight-weeks after the intervention as compared with the target nutrient intake defined by the DASH diet. The nutrients included based on DASH diet recommendations were sodium, dairy, grain, fruit, vegetable, and lean meat intake. The project leader extracted the nutrient measurements from the ASA24 into Excel and performed a one sample t-test comparing the data to the target value for evaluation of the intake of the nutrients pre-intervention and post-intervention. The project leader also conducted a paired t-test to test the statistically significant difference in nutrient intake pre-intervention and post-intervention. The target value for sodium was 2300mg. There was not a statistically significant difference between the pre-intervention sodium intake ($M=3314.8\text{mg}$, $SD=1167.5\text{mg}$) and the post-intervention sodium intake ($M=2865.7\text{mg}$, $SD=1155.4\text{mg}$); $t(11)=-1.5$ with the p-value of 0.07;

however, there was a 28% overall reduction in participants' sodium intake with an average sodium reduction of 449mg. The target value for dairy was 3 cups. The post-intervention dairy intake ($M=0.92$ cup, $SD=1.10$ cups) was actually slightly lower after the intervention with the pre-intervention dairy intake being ($M=1.43$ cups, $SD=1.22$ cups); $t(11)=-1.03$. The target value for grain intake was 6 ounces. The grain intake evaluation revealed that the post-intervention grain intake ($M=3.37$ oz., $SD=1.69$ oz.) was not higher than the pre-intervention grain intake ($M=5.90$ oz., $SD=1.69$ oz.); $t(11)=-2.65$. The post-intervention grain intake actually significantly decreased post-intervention as the participants' intake values were further from the target. The target value for fruit was 3 cups. There was a statistically significant difference between the pre-intervention fruit intake ($M=0.11$ cup, $SD=0.17$ cup) and the post-intervention fruit intake ($M=0.71$ cup, $SD=1.04$ cups); $t(11)=1.92$ with a p-value of 0.035. Fruit intake actually increased by 1 serving (1 cup) on average. The target value for vegetables was 4 cups. There was not a significant difference between the pre-intervention vegetable intake ($M=1.54$ cups, $SD=0.74$ cup) and the post-intervention vegetable intake ($M=1.83$ cups, $SD=0.99$ cup); $t(11)=0.67$ with a p-value of 0.248; however, there was a slight overall increase in vegetable consumption by 0.05%. The target value for lean meat was 6 ounces. There was not a significant difference between the pre-intervention lean meat intake ($M=6.09$ oz., $SD=4.01$ oz.) and the post-intervention lean meat intake ($M=6.68$ oz., $SD=4.86$ oz.); $t(11)=0.34$ with a p-value of 0.363. The average increase in lean meat consumption was one ounce. Of the 11 participants who experienced a decrease in systolic blood pressure, seven participants (64%) had increased their fruit and vegetable intake, six participants (55%) decreased their sodium intake, five participants (45%) had a lean meat intake closer to the goal, four participants (36%) increased their dairy intake, and two participants (18%) had a grain intake closer to the goal (See *Figure 3*).

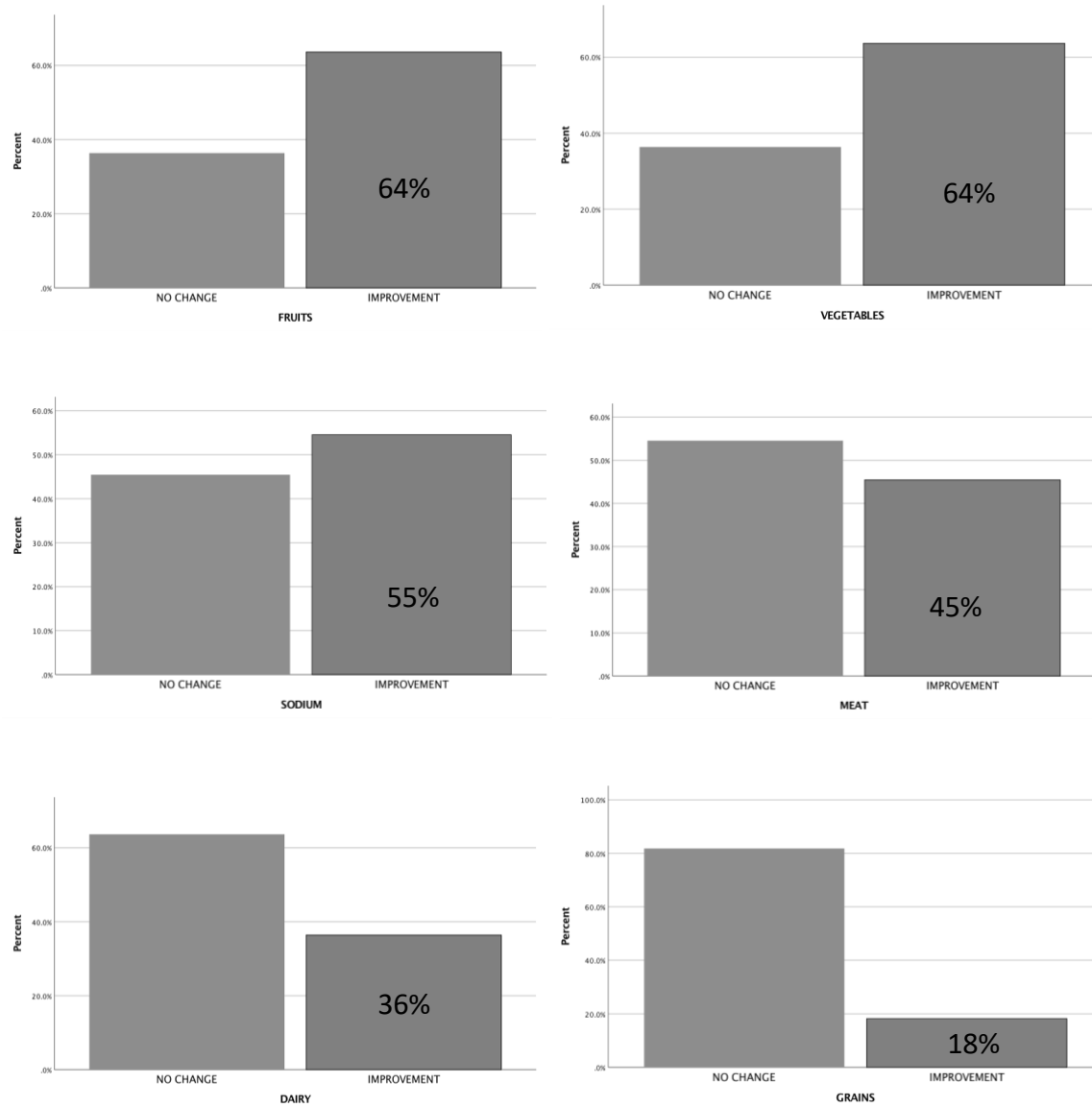


Figure 3. Percentage of participants who had an improvement in SBP with correlating dietary improvement

SECTION FIVE: DISCUSSION

Implications for Practice

Although not all of the results revealed statistical significance, there is clinical significance regarding the results of this project. The positive changes in regard to the

participants diet eight weeks after the intervention were a decrease in sodium intake, an increase in fruit and vegetable intake, and a balance in lean meat intake; whereas, the nutrients not greatly influenced included a slight decrease in dairy and grain intake. Perhaps the DASH diet education emphasized fruits, vegetable, and sodium intake rather than grain, dairy, and lean meat intake. The DASH diet is a balanced diet change, requiring consideration of six key nutrients; however, when changing one's diet, one may only feel able to focus primarily on one or two changes. Perhaps the DASH diet can be too complicated for patients with low HL to fully comprehend within one education session. In future practice, presenting the DASH diet through the teach-back method with a focus on one or two elements at a time may be beneficial for patient comprehension and compliance. There was a correlation among improvement in blood pressure management with an increase in fruit and vegetable intake and a decrease in sodium intake.

This project reveals the importance of utilizing the teach-back method when performing patient education as well as the influence the DASH diet has on blood pressure management. Providers must be mindful of patients' health literacy when providing education and implement evidence-based methods to address their health literacy. Utilizing the NVS during the patient check-in process is a great way for healthcare workers to assess and address patient health literacy. The NVS can be utilized as a tool to evaluate patients' health literacy when establishing them into a clinical practice. The NVS interview only took approximately 10 minutes; thus, clinical practices could implement this tool into the patient check-in process easily. The ASA24 is a great tool for researchers to utilize when assessing patients' nutrient intakes through collecting a 24-hour dietary recall.

Implementing the teach-back method during education empowers patients to promote their own health and improve the management of chronic health conditions such as hypertension. Best practice is to utilize the teach-back method with all patient education to ensure patient comprehension of the information comprehension (Institution for Healthcare Improvement, 2019). Patients' nutritional non-compliance does not necessarily mean a lack of self-care or self-control; rather, patients may have a knowledge deficit or find difficulty in fully comprehending the evidence-based recommendations routinely reviewed during office visits. During the follow-up visits, many of the participants reported they had a better understanding of nutritional methods to lower their blood pressure, and although they may not always comply to these recommendations, the education helped the patients be more mindful of their food choices. The clinic where this project took place does not currently have any educational strategies to address patients' health literacy. As the employees and director of this organization see the results of this project, perhaps they will decide to implement the teach-back method into all their discharge education.

There are limitations to the results of this project. The use of convenience sampling with a small sample size can limit the generalizability of the project. The sample size was small due to time constraints, strict inclusion and exclusion criteria, and lack of patient follow-up. The 24-hour dietary recall is subjective and dependent upon the patients' memory; thus, the nutritional data may not be completely reflective of the patients' actual nutrition intake. There are many external factors which can influence blood pressure, including medication compliance, correlating health conditions, stress, and method of measurement which can skew the validity of the results. The blood pressure and 24-hour dietary recall results were only collected once, which cannot fully captivate the extent of the interventions' influence. In fact, many participants

stated they have made dietary changes due to the education; however, the 24-hour recall did not always reflect those dietary choices. Ideally, in future research, a blood pressure and nutrition diary to average the patients' blood pressure readings and consistent nutrition intake over time could be utilized to achieve more accurate results.

Sustainability

The goal of sustainability for this project is for the clinic staff and all healthcare professionals to implement the teach-back method during all patient education. Several factors must be considered when adopting this type of practice change. The urgent care clinic is fast-paced which can rush the education process. Utilizing the teach-back method does take more time than merely providing a handout or a quick verbal explanation, but ultimately utilizing this method can improve patient comprehension and compliance which can save time long-term by improving patients' conditions and thus preventing more frequent clinic visits. The project leader did utilize the time patients were waiting to perform the education; thus, for this clinic, the nurses could perform teach-back method education on chronic disease management while patients are waiting for the doctor. The culture of the healthcare environment which adopts the teach-back method must be one of quality over quantity, prioritizing quality patient education to not only treat acute illnesses but to promote proper management of existing chronic diseases through education. The staff in the clinic were supportive of this project, and the results of this project will be disseminated to the clinic staff to reveal the effectiveness of education through the teach-back method.

Dissemination Plan

The impact of evidence is greatly dependent upon the strategies taken for dissemination. This project validates the importance of utilizing the teach-back method especially during

nutritional education for chronic disease management. This evidence is valuable on the micro-, meso-, and macro-levels of healthcare. The project results will be shared with the employees of the clinic in hopes that this clinic will adopt the teach-back method as standard practice. This project leader will consider submitting a brief report manuscript to a health literacy journal, which has free global access, thus making this evidence accessible to the world. Additionally, this manuscript will be submitted to the Digital Commons which will allow individuals to access the data through Google Scholar. Lastly, the project leader will consider presenting the project in professional conferences and healthcare settings when given the opportunity.

Conclusion

Low HL has proven to be a major barrier to patients achieving optimum health. Patients with low HL are at higher risk for poor health outcomes, more frequent hospitalizations, and mortality (Agency for Healthcare Research and Quality, n.d.). With a growing body of evidence, healthcare providers are privileged to have evidence-based education tools like the teach-back method to address patients' health literacy and empower them to control their own chronic health conditions. Implementing the teach-back method into chronic disease management education has been shown in many studies to improve health outcomes, especially in regard to nutritional methods to improve health (Dantic, 2014; Dinh et al., 2016; Liu, Li. Liu, & Chen, 2018; Matthew et al., 2017). This evidence-based project validates the effectiveness of the teach-back method in promoting DASH diet compliance and improving blood pressure management for patients with hypertension and low health literacy. Further research should continue to be conducted on the teach-back method to further explore the impact the teach-back method has on health outcomes for patients with low HL. Healthcare workers are uniquely positioned to address patients' health literacy needs through implementing evidence-based education tools

such as the teach-back method to improve health equity, decrease health disparities, and improve quality of care.

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Appendix A

Evidence Table

Name: Role of Health Literacy in Hypertension

Clinical Question: Will providing DASH diet education through utilizing the teach back method (I) for patients with low health literacy and hypertension (P) better their blood pressure control and dietary compliance (O) compared to their blood pressure and dietary choices prior to the intervention (C) over an eight-week period (T)?

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
Saneei, P., Salehi-Abargouei, A., Esmailzadeh, A., & Azadbakht, L. (2014). Influence of dietary approaches to stop hypertension (DASH) diet on blood pressure: A systematic review and meta-analysis on randomized controlled trials. <i>Nutrition, Metabolism and Cardiovascular Diseases</i> , 24(12), 1253-1261.	To identify the degree of impact the DASH diet has on blood pressure	17 randomized controlled trials with 2561 total patients were identified and analyzed	A systematic review and meta-analysis of randomized controlled trials	The DASH diet reduced systolic blood pressure by 6.75 mmHg and diastolic blood pressure by 3.54 mmHg	Level I: Systematic review and meta-analysis of randomized controlled trials	Other variables, including exercise and weight loss, could also influence the results. The DASH diet was presented differently with the various studies which may	Yes, provides evidence that the DASH diet is effective to lower blood pressure and, therefore, should be implemented

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
doi:10.1016/j.numecd.2014.06.008						create inconsistencies.	
Malloy-Weir, L., & Cooper, M. (2017). Health literacy, literacy, numeracy and nutrition label understanding and use: A scoping review of the literature. <i>Journal of Human Nutrition and Dietetics</i> , 30(3), 309-325. doi:10.1111/jhn.12428	To assess the relationship between health literacy, nutrition literacy, and using nutrition labels	8 databases were utilized, 16 studies were selected based on inclusion criteria	A systematic review of experimental and non-experimental designs	Some of the studies found a correlation between health literacy and nutrition literacy. Patients with low literacy were less likely to use food labels	Level V: Systematic review of descriptive and qualitative studies	There was variability on the results of some of the studies due to the various measurements utilized, including self-reported data which may not be reliable.	Yes, although it is a level 5 study with some limitations, some of the included research in this review revealed a correlation between health literacy and nutrition, and verified the successful use of the

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
							Newest Vital Sign measurement for health literacy
Halladay, J. R., Donahue, K. E., Cené, C.W., Li, Q., Cummings, D. M., Hinderliter, A. L., . . . DeWalt, D. (2016). The association of health literacy and blood pressure reduction in a cohort of patients with hypertension: The heart healthy lenoir trial. <i>Patient Education and Counseling</i> , 100(3), 542-549. doi:10.1016/j.pec.2016.10.015	To implement a quality improvement intervention with health literacy strategies to reduce systolic BP	525 patients with uncontrolled hypertension who scored both with low and high health literacy	Non-randomize prospective cohort study	A significant decrease in mean SBP from 6.6 to 5.3 mmHg in 12 months and 8.1 to 4.6 mmHg in 24 months between low and high health literacy groups	Level IV: Cohort study	There is no control group for comparison and other variables could influence the results of this study.	Yes, this study shows that implementation of health literacy tools and methods can improve hypertensive patient's SBP whether they have high or low health literacy.

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
Dinh, H., Bonner, A., Clark, R., Ramsbotham, J., & Hines, S. (2016). The effectiveness of the teach-back method on adherence and self-management in health education for people with chronic disease: a systematic review. <i>JBIR Database System Review Implement Rep.</i> 14(1): 210-47. doi:10.11124/jbisrir-2016-2296	To evaluate the evidence for improving chronic disease management through the teach-back method	Included 12 articles which implemented teach back method. Subjects had to have one or more chronic condition.	A systematic review including randomized and non-randomized studies	4 studies revealed improvement in disease-specific knowledge, 1 study showed improved adherence to medication and diet, 2 studies showed improvement in self-efficacy, 5 studies showed reduction in readmissions	Level V: Systematic review of qualitative and descriptive studies	There were few randomized-controlled trials. The measurement of some of the studies were variable and did not always show statistical significance.	Yes, although there are limitations and it is a level 5 study, the teach-back method did prove to be effective in improving health literacy and improving chronic health conditions.
Liu, Y., Li, Y., Liu, L., & Chen, Y. (2018). Effectiveness of the teach-back method for improving	To identify the effectiveness of the teach-	127 elderly in the intervention group and	Randomized-controlled trial	The total health literacy score in the group with	Level II: Randomized	The generalizability may be limited as	Yes, this study can support the effectiveness

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
the health literacy of senior citizens in nursing homes. <i>Japan Journal of Nursing Science</i> , 15(3), 195-202. doi:10.1111/jjns.12192	back method for the elderly	136 elderly in the control group selected from 27 nursing homes in China		the intervention showed significant improvement in health literacy compared to the control group with the use of the teach-back method	controlled trial	the study only involved patients from nursing homes and the sample size was small. One of the measurements was self-reported health literacy which is susceptible to bias.	s of the teach-back method; however, the study can be utilized with supplemental evidence as it has multiple limitations.
Cha, E., Kim, K. H., Lerner, H. M., Dawkins, C. R., Bello, M. K., Umpierrez, G., & Dunbar, S. B. (2014). Health literacy, self-	To examine the relationship between health	106 adults ages 18-29 were included	Correlational cross-sectional study	Caucasians and those with higher levels of education had	Level VI: descriptive study	Small sample size and specific age ranges makes the	Yes, the study is not the strongest as it is a level

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
efficacy, food label use, and diet in young adults. <i>American Journal of Health Behavior</i> , 38(3), 331-339. doi:10.5993/AJHB.38.3.2	literacy, food label use, and dietary quality			a higher health literacy. Those who used food labels more frequently had a better-quality diet. Low literacy led to avoiding food label use and poor food choices.		results difficult to generalize. Results are qualitative which can cause variability.	6 with limitations, but it did strengthen the relationship between health literacy, nutrition literacy, and nutrition label use impacting food choices as well as validated the use of the Newest Vital Sign measure

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
							nt for health literacy.
Slatore, C. G., Kulkarni, H. S., Corn, J., & Sockrider, M. (2016). Improving health literacy: The new American thoracic society guidelines for patient education materials. <i>Annals of the American Thoracic Society</i> , 13(8), 1208-1211. doi:10.1513/AnnalsATS.201605-337OT	To communicate evidence-based guidelines for patient education materials	Not applicable	Clinical Guidelines	These guidelines ensure the American Thoracic Society only publishes education materials that avoid medical jargon, appropriate reading level, and formatted as easy to read.	Level I: Clinical guidelines	Not applicable	Yes, these clinical guidelines can serve as a template for other practices to use, ensuring patient education is provided at the health literacy level of the patient and applying health literacy principles.
Dantic, D. E. (2014). A critical review of the	To evaluate the	9 studies were	A systematic	67% of the studies	Level V: Systemati	The sample size was	Yes, the included

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
effectiveness of ‘teach-back’ technique in teaching COPD patients self-management using respiratory inhalers. <i>Health Education Journal</i> , 73(1), 41-50. doi:10.1177/0017896912469575	effectiveness of the teach-back method for patients with COPD	included with a total of 785 patients who participated. 5 studies were randomized and 4 were nonrandomized	review of randomized and non-randomized controlled trials	revealed the teach-back method in promoting comprehension of inhaler technique and helped to overcome barriers of vision, multiple inhaler devices, gender, and age.	c review of descriptive and qualitative studies	small and just consisted of patients with COPD which can compromise the generalizability.	studies showed the effectiveness of the teach-back method in improving patient comprehension and health literacy.
Jones, N. R. V., Forouhi, N. G., Khaw, K., Wareham, N. J., & Monsivais, P. (2018). Accordance to the dietary approaches to stop hypertension diet pattern and cardiovascular disease in a British, population-	To evaluate the effectiveness of the DASH diet in reducing cardiovascular disease	23,655 adults in the UK ages 39-79.	Prospective analysis of a cohort study	Significant relation between DASH diet adherence and decrease incident in stroke and	Level VI: Descriptive study	Adherence to the DASH diet was self-reported which can create a bias and	Yes, though it is a level 6 study with limitations, this data can be supplement

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
based cohort. <i>European Journal of Epidemiology</i> , 33(2), 235-244. doi:10.1007/s10654-017-0354-8				CVD as well as lower risk of CVD mortality.		inconsistent data.	ed with stronger studies to suggest the benefit of the DASH diet for heart disease
Matsuoka, S., Tsuchihashi-Makaya, M., Kayane, T., Yamada, M., Wakabayashi, R., Kato, N. P., . . . Institutionen för samhälls- och välfärdsstudier. (2016). Health literacy is independently associated with self-care behavior in patients with heart failure. <i>Patient Education and Counseling</i> , 99(6), 1026-1032.	To identify the relationship between health literacy and self-care for heart failure patients	249 patients with heart failure NYH class I-III from 3 hospitals in rural and urban areas were included.	Cross-sectional observational analysis. Measurement was with the heart-failure specific health literacy scale and European	Patients with low health literacy had worse knowledge and self-care for managing their heart failure than those with high health literacy. Critical health literacy revealed a	Level VI: Descriptive study	Self-reporting measures were utilized which can limit the validity of the results and present bias.	Yes, this study suggests that implementing interventions such as the teach-back method can improve patient's self-care which can

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
doi:10.1016/j.pec.2016.01.003			Heart Failure Self-Care Behavioral Scale.	major influence on self-care behaviors.			ultimately improve the management of their chronic disease.
Hersh, L., Salzman, B., & Snyderman, D., (2015). Health literacy in primary care practice. <i>American Family Physician</i> , 92(2), 118-124.	To provide evidence-based recommendations on interventions to promote health literacy in the primary care setting	Not applicable	Clinical guidelines and a systematic review for addressing health literacy	Recommendations include using plain, nonmedical language, avoid assumptions, speak slowly, confirm patient understanding through teach-back, provide appropriate printed communication, and communicate	Level I: Clinical guidelines based on systematic reviews	Not applicable	Yes, these clinical guidelines are evidence-based and provide great tools to implement into the primary care setting to address health literacy, especially promoting

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
				simplified numerical data.			the teach-back method.
Gibbs, H. D., Ellerbeck, E. F., Gajewski, B., Zhang, C., & Sullivan, D. K. (2018). The nutrition literacy assessment instrument is a valid and reliable measure of nutrition literacy in adults with chronic disease. <i>Journal of Nutrition Education and Behavior</i> , 50(3), 247-257.e1. doi:10.1016/j.jneb.2017.10.008	To assess the validity of the Nutrition Literacy Assessment Instrument and examine the relationship between nutrition literacy and diet quality	429 adults were included with nutrition-related chronic disease from outpatient clinics	Cross-sectional observational analysis	The Nutrition Literacy Instrument had a reliability rate of 88%. Nutrition literacy was the greatest predictor of diet quality.	Level VI: Descriptive study	Measurement of diet quality was made through questionnaires which may provide inaccuracies.	Yes, the Nutrition Literacy Instrument can be considered to be used as output data for a study, and this study shows that nutrition literacy greatly influences dietary decisions.
Shealy, K. M., & Threatt, T. B. (2016). Utilization of the newest vital sign (NVS) in	To assess the use of health literacy	23 articles which utilized NVS	A systematic review of	Several of the studies showed	Level V: Systematic review	Many of the studies had different	Yes, this systematic review

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
practice in the united states. <i>Health Communication</i> , 31(6), 679-687. doi:10.1080/10410236.2014.990079	screening tests such as the New Vital Sign (NVS) survey	to assess health literacy were included.	randomized and non-randomized studies	correlation between health literacy measured by NVS and health behaviors and outcomes.	of descriptive and qualitative studies	measures and focuses which makes the results of this study difficult to verify. Some of the included articles just mentioned NVS and health literacy but did not yield many results.	reveals a correlation between health literacy and patient behaviors and some of the studies involved did validate NVS as a tool to measure health literacy.
Shi, D., Li, J., Wang, Y., Wang, S., Liu, K., Shi, R., . . . Chen, X. (2017). Association between health literacy and hypertension management in a Chinese	To identify factors related to health literacy and	360 patients with hypertension who participated in	Retrospective cohort study. The measurement was	Education status, home blood pressure measurement, employment,	Level IV: Cohort study	Small sample size and subjects only from China can limit the	Yes, this study reveals the correlation between low health

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
community: A retrospective cohort study. <i>Internal and Emergency Medicine</i> , 12(6), 765-776. doi:10.1007/s11739-017-1651-7	hypertension management	community health check-ups were capable of measuring their blood pressure at home were included. The study was conducted in China.	Chinese Health Literacy Scale for Hypertension.	compliance with medications, and SBP were highly correlated with health literacy. Blood pressure was managed better in patients with high health literacy.		generalizability. Home blood pressure measurements may be inconsistent dependent upon user error.	literacy and uncontrolled hypertension and shows importance of implementing health literacy interventions.
Mathew, M. R., Mohan, L., Paul, M., Maideen, M., Jose, L., & Ommanakuttan, M. (2017). Evaluating effectiveness of patient counseling, teach back versus standard method. <i>International Journal of Basic & Clinical</i>	To compare the effectiveness of the teach-back method versus a standard counseling method on	150 patients from a pulmonary medicine department were included. One group received	Prospective experimental case-control study performed over 6 months	Post-tests were provided after being taught. The perfect score for the test was a 8. Out of the teach-back method	Level IV: Case-control study	There are many other variables which can influence the scores of the patients. The sample	Yes, this study proves the teach-back method is more influential in improving

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
<i>Pharmacology</i> , 7(1), 87. doi:10.18203/2319-2003.ijbcp20175680	memory retention of patient care instructions	standard counseling while the other group received education through the teach-back method		group, 29.33% of the patients scored an 8, but in the standard method group, only 1.3% scored an 8.		size was limited.	patient understanding of instructions than a standard teaching method.

Appendix B

CITI Training Certificate

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 1 OF 2 COURSEWORK REQUIREMENTS*

* NOTE: Scores on this [Requirements Report](#) reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- Name: Patrice Spencer (ID: 5903600)
- Institution Affiliation: Liberty University (ID: 2446)
- Institution Email: mrwines@liberty.edu
- Institution Unit: DNP-FNP
- Curriculum Group: Biomedical Research - Basic/Refresher
- Course Learner Group: Biomedical & Health Science Researchers
- Stage: Stage 1 - Basic Course
- Description: Choose this group to satisfy CITI training requirements for Investigators and staff involved primarily in biomedical research with human subjects.
- Record ID: 21139828
- Completion Date: 12-Oct-2016
- Expiration Date: 12-Oct-2019
- Minimum Passing: 80
- Reported Score*: 82

REQUIRED AND ELECTIVE MODULES ONLY

	DATE COMPLETED	SCORE
Belmont Report and Its Principles (ID: 1127)	12-Oct-2016	3/3 (100%)
History and Ethics of Human Subjects Research (ID: 498)	12-Oct-2016	7/7 (100%)
Basic Institutional Review Board (IRB) Regulations and Review Process (ID: 2)	12-Oct-2016	4/5 (80%)
Informed Consent (ID: 3)	12-Oct-2016	5/5 (100%)
Social and Behavioral Research (SBR) for Biomedical Researchers (ID: 4)	12-Oct-2016	3/4 (75%)
Records-Based Research (ID: 5)	12-Oct-2016	3/3 (100%)
Genetic Research in Human Populations (ID: 6)	12-Oct-2016	3/5 (60%)
Populations in Research Requiring Additional Considerations and/or Protections (ID: 16680)	12-Oct-2016	5/5 (100%)
FDA-Regulated Research (ID: 12)	12-Oct-2016	4/5 (80%)
Research and HIPAA Privacy Protections (ID: 14)	12-Oct-2016	3/5 (60%)
Vulnerable Subjects - Research Involving Workers/Employees (ID: 483)	12-Oct-2016	4/4 (100%)
Recognizing and Reporting Unanticipated Problems Involving Risks to Subjects or Others in Biomedical Research (ID: 14777)	12-Oct-2016	3/5 (60%)
Conflicts of Interest in Research Involving Human Subjects (ID: 488)	12-Oct-2016	3/5 (60%)
Liberty University (ID: 15111)	12-Oct-2016	No Quiz

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

Verify at: www.citiprogram.org/verify/2k1a06340a-05c7-46f7-af34-3da92dc60132-21139828

Collaborative Institutional Training Initiative (CITI Program)

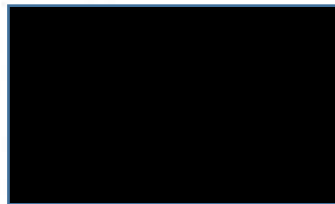
Email: support@citiprogram.org

Phone: 888-529-5929

Web: <https://www.citiprogram.org>

Appendix C

Letter of Support



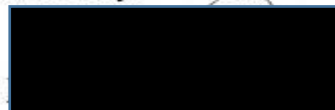
November 1, 2018

Re: Patrice Spencer Scholarly Project

To Whom It May Concern:

I have reviewed the Scholarly Project proposal submitted by Ms. Spencer, and we are supportive of it. We offer the patients and support of Dr. Jon's Urgent Care as a research site.

Sincerely,



President

Appendix D

Permission to Use the Iowa Model

Permission to Use The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care



Reply all |

Spencer, Patrice Helen ✕

Inbox



Action Items



You have permission, as requested today, to review and/or reproduce *The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care*. Click the link below to open.

[The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care](#)

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Citation: Iowa Model Collaborative. (2017). Iowa model of evidence-based practice: Revisions and validation. *Worldviews on Evidence-Based Nursing*, 14(3), 175-182. doi:10.1111/wvn.12223

In written material, please add the following statement:

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Please contact UIHCNursingResearchandEBP@uiowa.edu or 319-384-9098 with questions.

The Newest Vital Sign



Appendix E

The Newest Vital Sign

Nutrition Facts

Serving Size	½ cup
Servings per container	4

Amount per serving

Calories	250	Fat Cal	120
----------	-----	---------	-----

%DV

Total Fat	13g	20%
------------------	-----	-----

Sat Fat	9g	40%
---------	----	-----

Cholesterol	28mg	12%
--------------------	------	-----

Sodium	55mg	2%
---------------	------	----

Total Carbohydrate	30g	12%
---------------------------	-----	-----

Dietary Fiber	2g
---------------	----

Sugars	23g
--------	-----

Protein	4g	8%
----------------	----	----

*Percentage Daily Values (DV) are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

Ingredients: Cream, Skim Milk, Liquid Sugar, Water, Egg Yolks, Brown Sugar, Milkfat, Peanut Oil, Sugar, Butter, Salt, Carrageenan, Vanilla Extract.

Appendix F

ASA24 Tool Permission



Dear Patrice Spencer,

Welcome to the Automated Self-Administered 24-Hour Recall (ASA24) system. Your study, **DASH Diet Education with Teach-Back Method**, has been approved to use **ASA24-2018** of ASA24.

Please refer to the instructions and other resources available from the ASA24 Researcher Site (<https://asa24.nci.nih.gov/Researcher/>) or the NCI ASA24 website (<http://epi.grants.cancer.gov/asa24/>) for details on configuring and monitoring your study.

The ASA24 Respondent Site that your study participants will use to complete their recalls is <https://asa24.nci.nih.gov/>. You can access a demo version of the Respondent Site at <https://asa24.nci.nih.gov/demo/>.

For security purposes, we strongly suggest that if you use email to communicate with your study respondents, you send the username and password in an email separate from the message containing the Respondent Site URL and other study-specific instructions.

Please note the following:

- The database underlying the Respondent Web site, which includes all of the probes used to collect details on foods, drinks, and supplements consumed, has over 7 million entries. We continuously perform ongoing quality control checks. However, if you have found a bug, please report it using the following link on our Web site (<http://epi.grants.cancer.gov/asa24/support/report.html>).
- The interface includes approximately 10,000 images to assist respondents in estimating portion size but it is not complete. We continue to fill in missing portion size images as they become available.

If you have questions, please contact the ASA24 Support Team at ASA24HelpDesk@Westat.com.

Thank you,

The ASA24 Support Team

[Join the ASA24 Listserv](#)

Appendix G

Informed Consent Form

CONSENT FORM

The Implementation of the Teach-Back Method to Promote Adherence to the DASH Diet and Blood Pressure Control in Hypertensive Patients with Low Health Literacy

Patrice Spencer
Liberty University
School of Nursing

You are invited to be in a project on the influence of a health literacy tool known as the teach-back method used for teaching the DASH diet to patients with low health literacy. You were selected as a possible participant because you have a diagnosis of hypertension, the survey revealed you may have low health literacy, and you are English speaking. Please read this form and ask any questions you may have before agreeing to be involved in the project.

Patrice Spencer, enrolled as a family nurse practitioner and doctor of nursing practice student at Liberty University, is conducting this project.

Background Information: The purpose of this study is to evaluate the effectiveness of the teach-back method in providing DASH diet education in controlling patients' blood pressure and improving dietary compliance for patients with low health literacy and a diagnosis of hypertension.

Procedures: If you agree to be in this project, I would ask you to do the following things:

1. Have your blood pressure taken (approximately 5 minutes)
2. Perform an interview with 6 questions to assess your health literacy and a 24-hour dietary recall (approximately 10 minutes)
3. Participate in DASH diet education with the teach-back method (approximately 20 minutes)
4. Implement the diet change over a three-month period
5. Return in three months for a follow-up appointment to check your blood pressure and an interview on your diet recall (approximately 15 minutes)

Risks: The risks involved in this study are minimal, meaning they are equal to the risks you would encounter in everyday life.

Benefits:

The direct benefits participants should expect to receive from taking part in this project are receiving thorough education on a dietary approach to stop hypertension which may result in reduced blood pressure, weight loss, and an overall improvement to your health.

Appendix G

Compensation: Participants will not be compensated for participating in this project.

Confidentiality: The records of this project will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the project leader will have access to the records. I may share the data I collect from you for use in future research studies or with other researchers; if I share the data that I collect about you, I will remove any information that could identify you, if applicable, before I share the data.

- Participants will be assigned a number and initials. I will conduct the interviews in a private patient room where others will not easily overhear the conversation.
- The data will be stored on a password locked computer, in a locked desk, and may be used in future presentations. After three years, all electronic records will be deleted.

Voluntary Nature of the Study: Participation in this project is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University or Dr. Jon's Urgent Care. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

How to Withdraw from the Study: If you decide to withdraw from the project, please contact the project leader at the email address included in the contact section. Your records will be discarded immediately and will not be included in the project.

Contacts and Questions: The project leader conducting this study is Patrice Spencer. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at phkearney@liberty.edu. You may also contact the researcher's faculty chair, Dr. Cindy Goodrich at cgoodrich@liberty.edu.

If you have any questions or concerns regarding this project and would like to talk to someone other than the project leader, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA 24515 or email at irb@liberty.edu.

Please notify the project leader if you would like a copy of this information for your records.

Your enrollment in this project will be considered as consent that you have read and understood the above information, have asked questions and received answers, and consent to participate in this project.

Appendix H

Dash Diet Instructions Provided through Teach-Back

DASH Diet: Care Instructions**Your Care Instructions**

The DASH diet is an eating plan that can help lower your blood pressure. DASH stands for Dietary Approaches to Stop Hypertension. Hypertension is high blood pressure.

The DASH diet focuses on eating foods that are high in calcium, potassium, and magnesium. These nutrients can lower blood pressure. The foods that are highest in these nutrients are fruits, vegetables, low-fat dairy products, nuts, seeds, and legumes. But taking calcium, potassium, and magnesium supplements instead of eating foods that are high in those nutrients does not have the same effect. The DASH diet also includes whole grains, fish, and poultry.

The DASH diet is one of several lifestyle changes your doctor may recommend to lower your high blood pressure. Your doctor may also want you to decrease the amount of sodium in your diet. Lowering sodium while following the DASH diet can lower blood pressure even further than just the DASH diet alone.

Follow-up care is a key part of your treatment and safety. Be sure to make and go to all appointments, and call your doctor if you are having problems. It's also a good idea to know your test results and keep a list of the medicines you take.

How can you care for yourself at home?**Following the DASH diet**

- Eat 4 to 5 servings of fruit each day. A serving is 1 medium-sized piece of fruit, $\frac{1}{2}$ cup chopped or canned fruit, $\frac{1}{4}$ cup dried fruit, or 4 ounces ($\frac{1}{2}$ cup) of fruit juice. Choose fruit more often than fruit juice.
- Eat 4 to 5 servings of vegetables each day. A serving is 1 cup of lettuce or raw leafy vegetables, $\frac{1}{2}$ cup of chopped or cooked vegetables, or 4 ounces ($\frac{1}{2}$ cup) of vegetable juice. Choose vegetables more often than vegetable juice.
- Get 2 to 3 servings of low-fat and fat-free dairy each day. A serving is 8 ounces of milk, 1 cup of yogurt, or 1 $\frac{1}{2}$ ounces of cheese.
- Eat 6 to 8 servings of grains each day. A serving is 1 slice of bread, 1 ounce of dry cereal, or $\frac{1}{2}$ cup of cooked rice, pasta, or

Appendix H

cooked cereal. Try to choose whole-grain products as much as possible.

- Limit lean meat, poultry, and fish to 2 servings each day. A serving is 3 ounces, about the size of a deck of cards.
- Eat 4 to 5 servings of nuts, seeds, and legumes (cooked dried beans, lentils, and split peas) each week. A serving is 1/3 cup of nuts, 2 tablespoons of seeds, or 1/2 cup of cooked beans or peas.
- Limit fats and oils to 2 to 3 servings each day. A serving is 1 teaspoon of vegetable oil or 2 tablespoons of salad dressing.
- Limit sweets and added sugars to 5 servings or less a week. A serving is 1 tablespoon jelly or jam, 1/2 cup sorbet, or 1 cup of lemonade.
- Eat less than 2,300 milligrams (mg) of sodium a day. If you limit your sodium to 1,500 mg a day, you can lower your blood pressure even more.

Tips for success

- Start small. Do not try to make dramatic changes to your diet all at once. You might feel that you are missing out on your favorite foods and then be more likely to not follow the plan. Make small changes, and stick with them. Once those changes become habit, add a few more changes.
- Try some of the following:
 - Make it a goal to eat a fruit or vegetable at every meal and at snacks. This will make it easy to get the recommended amount of fruits and vegetables each day.
 - Try yogurt topped with fruit and nuts for a snack or healthy dessert.
 - Add lettuce, tomato, cucumber, and onion to sandwiches.
 - Combine a ready-made pizza crust with low-fat mozzarella cheese and lots of vegetable toppings. Try using tomatoes, squash, spinach, broccoli, carrots, cauliflower, and onions.
 - Have a variety of cut-up vegetables with a low-fat dip as an appetizer instead of chips and dip.
 - Sprinkle sunflower seeds or chopped almonds over salads. Or try adding chopped walnuts or almonds to cooked vegetables.
 - Try some vegetarian meals using beans and peas. Add garbanzo or kidney beans to salads. Make burritos and tacos with mashed pinto beans or black beans.

Appendix I

IRB Approval

LIBERTY UNIVERSITY
INSTITUTIONAL REVIEW BOARD

April 22, 2019

Patrice Spencer

IRB Application 3777: The Implementation of the Teach-Back Method to Promote Adherence to the DASH Diet and Improve Blood Pressure Control in Hypertensive Patients with Low Health Literacy

Dear Patrice Spencer,

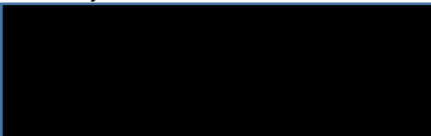
The Liberty University Institutional Review Board has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study does not classify as human subjects research. This means you may begin your research with the data safeguarding methods mentioned in your IRB application.

Your study does not classify as human subjects research because evidence-based practice projects are considered quality improvement activities, which are not considered "research" according to 45 CFR 46.102(l).

Please note that this decision only applies to your current research application, and any changes to your protocol must be reported to the Liberty IRB for verification of continued non-human subjects research status. You may report these changes by submitting a new application to the IRB and referencing the above IRB Application number.

If you have any questions about this determination or need assistance in identifying whether possible changes to your protocol would change your application's status, please email us at irb@liberty.edu.

Sincerely,



LIBERTY
UNIVERSITY.

Liberty University | Training Champions for Christ since 1971

Appendix J

Phone Scripting for Telephone Follow-up

Phone Follow-Up Scripting

Hello. This is Patrice Spencer, the project leader for the project you are participating in at Dr. Jon's Urgent Care. How are you doing today? As you may remember, when you came into the office, I checked your blood pressure, asked some questions about your diet choices, and provided dietary education for you to improve your blood pressure control. I understand you are not able to come in for your follow-up appointment. Are you willing to spend about ten minutes of your time to discuss your blood pressure and recent dietary choices with me? Have you taken your blood pressure at home today? If so, what was the blood pressure reading? If you have not taken your blood pressure, could you check your blood pressure now? I will wait on the phone, and you can let me know the results. Now I am going to perform the same 24-hour dietary recall that you did in the office. Can you tell me what you have eaten and drank within the last 24 hours? Thank you so much for your time and responses, I hope that you can continue to apply the DASH diet education to every dietary choice you make so you can better control your blood pressure and ultimately live the healthiest life possible. Do you have any questions for me right now? Thank you for participating in this project, I want to assure you that all this information will be kept private and confidential.

If you have any future questions or concerns about this project, please email me at



Thank you and have a great day.

*If the participant does not answer the phone, no voice message will be left for confidentiality reasons and the participant will be reached at a different time.

Appendix K

Flyer for Nurses at the Clinic

Does Your Patient Have a Diagnosis of Hypertension?

- ☐ During the check-in process, identify if the patient has a diagnosis of hypertension through review of the paper chart for new patients or review of the medical record for established patient.
- ☐ Say to the patient, “There is a project being conducted at this clinic for patients with hypertension. Would you mind if the project director comes in and speaks with you about the project to see if you would be interested in and able to participate?”
- ☐ Notify Patrice Spencer, the project director, of the patients identified as having a diagnosis of hypertension and who are willing to let her speak with them further about the project.
- ☐ If you have any questions about the process, please contact Patrice Spencer, phkearney@liberty.edu.