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Advancing Disease Knowledge and Health Beliefs on Dyslipidemia by Implementing Patient Education

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ADVANCING DISEASE KNOWLEDGE AND HEALTH BELIEFS ON DYSLIPIDEMIA BY
IMPLEMENTING PATIENT EDUCATION

Presented in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Nursing Practice

Nova Southeastern University
Health Professions Division
Assaf College of Nursing

Edwin S. Ramos
2021

NOVA SOUTHEASTERN UNIVERSITY
HEALTH PROFESSIONS DIVISION
ASSAF COLLEGE OF NURSING

This project, written by Edwin S. Ramos under the direction of Marcia J. Derby-Davis, PhD, RN, Project Chair, and approved by members of the project committee, has been presented and accepted in partial fulfillment of requirements for the degree of

DOCTOR OF NURSING PRACTICE

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Abstract

Dyslipidemia represents a chronic health condition with adverse effects to the individual's health and wellbeing that go beyond the factual elevation in the levels of total cholesterol in the blood, or the increase in levels of low-density lipoprotein cholesterol (LDL-C). The association of dyslipidemia and adverse health events, including cardiovascular conditions such as coronary artery disease (CAD) and stroke, are evident in clinical practice. Vulnerable populations, such as the adult and elderly Hispanic individuals in a primary care setting, can greatly benefit from increasing their knowledge and health beliefs related to dyslipidemia. The purpose of this evidence-based practice (EBP) educational intervention project is to increase the disease knowledge (DsK) and health beliefs of adult and elderly Hispanic patients in the primary care setting. Concomitantly, increasing in the participant's knowledge will also potentially improve their health literacy and general benefits in the patient's health outcomes. Results demonstrated that knowledge and health beliefs can be positively affected and improved by implementing an EBP educational intervention that requires participants to provide information before and after receiving the training. Considering the current health environment emanating from the coronavirus disease 2019 (COVID-19) pandemic, technology systems can be integrated to deliver educational programs to benefit vulnerable populations, decreasing health disparities, and improving overall wellbeing and health outcomes.

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CERTIFICATION OF AUTHORSHIP

Submitted to (Chair's Name): _Marcia J. Derby-Davis, PhD, RN_____

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Certification of Authorship: I hereby certify that I am the author of this document and that any assistance I received in its preparation is fully acknowledged and disclosed in the document. I have also cited all sources from which I obtained data, ideas, or words that are copied directly or paraphrased in the document. Sources are properly credited according to accepted standards for professional publications. I also certify that this paper was prepared by me for this purpose.

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Table of Contents

List of Tables

Chapter One: Overview of the Problem of Interest

Knowledge, and in particular, disease knowledge (DsK) is a factor that affects a person's understanding and acceptance of a given disease condition (Schiele, Emery, & Jackson, 2019). Knowledge represents an ability to comprehend and assimilate information provided. Therefore, individuals can take actions based on the knowledge received (Bolisani & Bratianu, 2018). Although sometimes not clearly defined, knowledge remains a rather powerful, yet immaterial concept (Bolisani & Bratianu, 2018). In the case of DsK, when it is appropriate, can result in significant improvements in emotional well-being, disease outlook and hopefulness, and behaviors aimed to increased social support (Schiele et al., 2019). Furthermore, particularly for chronic disease conditions, proper DsK is intimately related to improved health-related quality of life (HRQoL), and better psychological health (Schiele et al., 2019). On the other hand, HRQoL is inversely associated with health-related factors such as emotional distress, disease prognosis, and mortality (Schiele et al., 2019). Poor HRQoL and illness uncertainty are similarly, and directly closely related, a reason for which increasing DsK can be beneficial in improving the HRQoL and allowing for less uncertainty regarding the disease course (Schiele et al., 2019).

Knowledge, understanding, and awareness are sometimes interchangeably used in research literature (Trevethan, 2017). In the context of disease, DsK is a state of recognition and awareness of one's medical condition (Schiele et al., 2019). Moreover, DsK can incorporate both the general DsK, and the risk-related knowledge. General DsK encompasses a consideration of all the elements of the disease condition in question, whereas risk-related knowledge focuses on understanding the risk of having the disease (Schiele et al., 2019).

Notably, there are many factors that positively and negatively affect DsK. One of the most distinguishing, and closely related factor, is health literacy (Schrauben et al., 2020). Health

literacy has been identified as the ability of an individual to competently access, comprehend, and process a variety of material regarding health issues to promote health decisions (Koops van 't Jagt, Hoeks, Jansen, de Winter, & Reijneveld, 2016). Kim, H. and Xie (2017) defined health literacy as the skill that allows a person to function adequately and effectively in the healthcare environment. Health literacy-associated skills, along with DsK, when deficient, combine to negatively affect a person's overall wellbeing (Schrauben et al., 2020). Furthermore, improving DsK, along with health literacy typically leads to better self-care behavior by the individual, which is in turn beneficial to an overall wellbeing and health outcomes (Schrauben et al., 2020). Furthermore, limitations in the level of health literacy have been linked to deficiencies in disease management, increased non-adherence to recommended treatments, and increased hospitalizations and utilization of medical services (Wittenberg, Ferrell, Kanter, & Buller, 2018). Limited health literacy, therefore, can be a problematic issue in healthcare that needs to be addressed to avoid the deleterious consequences that accompany this problem (Kim, H. & Xie, 2017).

To acquire DsK, an individual must obtain health-related information pertinent to the disease condition (Schrauben et al., 2020). Health related literature is sometimes written at a level that is understandable to the health literate, but difficult to process for individuals with limited health literacy. Thus, the United States (U.S.) National Library of Medicine recommended that patient education is made available at a sixth grade reading level (Wittenberg el al., 2018). The advent of electronic heath (eHealth) and mobile health (mHealth), however, complicates matters more for those possessing limited health literacy. Telehealth can pose a barrier in accessing necessary health information and acquiring the knowledge needed to make informed decisions regarding health. Telehealth adds a technology-related component that is

otherwise not present in the hard-copy, paper printed health materials (Kim & Xie, 2017; Mock & Sethares, 2019; Schrauben et al., 2020).

Background Information

Knowledge is recognized to be a broad and somewhat vague concept (Bolisani & Bratianu, 2018). Yet, although the true definition of knowledge may vary, it is generally agreed that knowledge requires the acquisition of information from confident outside sources, which is then internalized and made factual (Trevethan, 2017). DsK, on the other hand, is specific to the disease condition of the individual (Schiele et al., 2019).

It is widely recognized that different types of populations are affected by poor DsK, but one population that is significantly affected by low levels of DsK is the elderly population (Tsou, 2017). This population is affected by social and economic characteristics that are intimately associated with chronic disease conditions and can be identified and resolved for the implementation of primary preventative measures (Tsou, 2017). Education is used to enhance and increase the knowledge level of an individual, and knowledge has a large influence in preventing and managing disease and the risk factors associated with disease (Tsou, 2017). Therefore, the development and implementation of programs that address health education and that can focus on prevention and self-monitoring behaviors, have the potential to positively affect the health and wellbeing of the elderly population (Tsou, 2017).

Likewise, the Latino or Hispanic population is affected by poor DsK (Turner et al., 2017). By U. S. Census Bureau estimates in 2013, there were 54 million Latino/Hispanics living in the U.S. (Brunk, Taylor, Williams, Cox, & Clark, 2017). This growing population does not experience and engage in healthcare in the same way other Americans do, making them a vulnerable population in healthcare (Brunk et al., 2017). Hispanics are recognized for possessing

decreased DsK and health literacy skills regarding chronic health problems, such as diabetes, placing this population at risk for incurring other negative effects from their deficiencies in DsK and health literacy (Brunk et al., 2017).

Furthermore, the differences that exist in the culture, customs, and values in the Latino or Hispanic population adds to the susceptibility experienced by this population regarding their use of healthcare services and their healthcare outcomes (Brunk et al., 2017). Nevertheless, ample evidence suggests that culturally sensitive educational interventions are effective in enhancing knowledge in this population (Brunk et al., 2017).

Significance of the Clinical Problem

Lacking knowledge concerning dyslipidemia is particularly important for patients who have this disease condition because it carries added negative consequences that can affect overall health. Dyslipidemia is defined as elevated total cholesterol, elevated low-density lipoprotein (LDL-C) cholesterol levels, or having a low level of high-density lipoprotein (HDL) cholesterol in blood (Pignone, 2019). The normal, desirable, levels for LDL-C is < 100 mg/dL, and < 200 mg/dL for total cholesterol. Cholesterol buildup in arteries results in the formation of plaques that obstruct arteries and decrease lumen sizes. The consequences of obstructed or narrowed arteries are a decrease effective blood flow. Narrowed or blocked arteries decrease the amount of oxygen delivered to tissues, organ, or organ systems potentially leading to ischemia and possible tissue or organ death (Pignone, 2019).

Negative health effects that result from dyslipidemia include heart disease (e. g. cardiovascular disease [CVD]), peripheral vascular disease (PVD), and stroke among others (Pignone, 2019). Decreasing overall levels of LDL-C in patients with increased risk for developing CVD is of paramount importance in reducing mortality for these patients (Pignone,

2019). Furthermore, adherence to recommendations regarding lifestyle modifications, pharmacologic treatment, or both has been associated with fewer coronary events and lower cardiovascular mortality (Rosenson & Braun, 2018). On the other hand, nonadherence to evidence-based pharmacotherapy has been linked to an increase in morbidity and mortality (Rosenson & Braun, 2018).

Several patient-related factors are known to affect treatment adherence for dyslipidemia, notably the patient's knowledge, functional health literacy, and their health beliefs (Rosenson & Braun, 2018). Therefore, increasing a patient's knowledge base and enhancing their health beliefs regarding a particular disease condition, including chronic illnesses, has the potential to result in benefits to the patient's overall health and wellbeing (Schrauben et al., 2020).

Problem Statement

Hispanic and elderly adult primary care patients lack dyslipidemia disease knowledge, which negatively impacts their ability to manage the disease.

Clinical Question Guiding Inquiry (PICO)

Does an educational intervention for Hispanic and elderly adult primary care patients with dyslipidemia increase disease knowledge and change health beliefs about dyslipidemia?

Purpose Statement

The purpose of this evidence-based practice educational intervention is to improve the knowledge and health beliefs of Hispanic and elderly adult primary care patients with dyslipidemia.

Overview of the Theoretical Framework

Nursing theories provide guidance to nursing practice, give structure for professional development, and help define the role that the nurse has in patient care (Butts, 2018). However,

not all theories used in nursing practice have a nursing origin. Other areas of life and science can have a profound influence on theories and models used by nurses every day. Fields such as psychology, economics, public health, and others have contributed to the development of some of the most known, and widely used theories and models in nursing today.

A group of social psychologists from the U. S. Public Health Service (USPHS) were struck as to why only a small number of people joined preventative and disease prevention programs (Current Nursing, 2012; Hochbaum, 1958). The HBM was one of the first theories developed to address health behaviors, particularly problem behaviors that could result in negative health outcomes (Current Nursing, 2012; Hochbaum, 1958). Nursing practice has demanded using nursing theories and models that aid in the understanding and development of nursing knowledge. The aim of the HBM has been to investigate the person's underlying factors (health beliefs) that affected self-care behaviors (Ma, 2018). This model is also used to find ways of understanding and predicting an individual's adherence with recommended therapies (Champion & Sugg Skinner, 2008).

The HBM has been used as a tool to define various health behavior-related characteristics: (a) to prevent disease, (b) to facilitate patient safety, and (c) to increase the degree of patient involvement in treatment (Caya, Knobloch, Musuuza, Wilhelmson, & Safdar, 2019). This model is based on six major concepts: perceived susceptibility, perceived severity, perceived threats, perceived benefits, perceived barriers, and cues to action (Skinner, Tiro, & Champion, 2015). HBM concepts have been used to predict if, and why, an individual will engage in health-related behaviors that will avoid, manage, and identify disease conditions (Skinner et al., 2015). The underlying principles are if individuals believe they are susceptible to a disease, and think that the disease is severe enough to cause significant harm, then individuals

will attempt to prevent the disease or treat the disease after understanding and taking into consideration the limitations and barriers associated with these actions (Skinner et al., 2015).

Perceived Susceptibility

Perceived susceptibility has been defined as an individual's personal assessment of risk for acquiring a disease condition (Skinner et al., 2015). This also refers to the individual's perception of self-relevance: how likely the condition develops, and the accuracy of the diagnosis (Current Nursing, 2012; Hochbaum, 1958). Many factors such as personal hygiene, genetics, and the environment have an influence on how individuals perceive their vulnerability to a particular disease (Caya et al., 2019).

Perceived Severity

Perceived severity is the individua's beliefs regarding how grievous a disease condition could be (Skinner et al., 2015). This belief also takes into account the perceived social and physical negative consequences of not treating the disease (Skinner et al., 2015). An individual must perceive that a disease must be considerably severe for action to commence (Current Nursing, 2012; Hochbaum, 1958). In this context, the acquisition of knowledge plays a pivotal role in stimulating the individual's decision to engage in and adhere in a behavior, or a set of behaviors that would reduce the severity of a given disease condition (Al-Noumani el al., 2019).

Perceived Threat

If people believe they are the susceptible to a disease and understand that it is severe enough, then they see it as a *perceived threat* (Skinner et al., 2015). Understanding that the disease is a threat is the result of perceived susceptibility multiplied by perceived seriousness (Caya et al., 2019). Such is the case of the perceived susceptibility and understanding the severity of experiencing a cardiovascular event that a patient may express when considering

lifestyle changes or medication adherence in dyslipidemia (Rosenson & Braun, 2018).

Perceived Benefits

Perceived benefits refer to the individual's assessment of the potential effectiveness of engaging in a health-behavior that would result in a decrease of the perceived threat (Skinner et al., 2015). Avoidance of the disease condition, preventative measures, or treatment and adherence to proposed disease management recommendations are pivotal to this concept (Skinner et al., 2015). An individual may need to assess the value of engaging in self-care behaviors that will lead to a set of positive health outcomes before adopting this concept (Caya et al., 2019). For example, patients can see the health benefits of taking lipid-lowering medications when clinicians clearly explain their progress in decreasing lipid levels with an explanation of the meaningful benefits to the patient's health outcomes (Rosenson & Braun, 2018).

Perceived Barriers

Although individuals may wish to practice self-care behaviors that result in benefits, and to avoid the negative consequences of a disease condition, they may encounter obstacles to achieving these goals. The results are the *perceived barriers* that may pose a limit to taking action (Skinner et al., 2015). The perceived barriers an individual may encounter range from barriers that are concrete and palpable (e. g. accessibility and related cost of treatment) to barriers that are psychological (e. g. fear related to the engagement in health-related behaviors). Perceived barriers can hinder the achievement of positive health outcomes (Skinner et al., 2015). Individuals may also take into consideration the length of time for the treatment of a particular disease condition, thus influencing the decision of whether to adopt health-behavior changes (Current Nursing, 2012; Hochbaum, 1958).

Cues to Action

Finally, the *cues to action* concept of the HBM refers to the activities and actual activating factors that influence taking action to reduce a perceived threat, and to increase the perceived benefits associated with the behavior (Skinner et al., 2015). Motivation is key to stimulating these cues and for achieving the desired positive health effect and outcome (Current Nursing, 2012; Hochbaum, 1958). In the management of dyslipidemia, the patient's readiness to adopt changes in lifestyle is a more important consideration compared to the prescription of medications to treat this condition (Rosenson & Braun, 2018). However, if medication needs to be prescribed, ensuring prescriptions are low cost, accessible, and convenient to take enhances adherence to treatment (Rosenson & Braun, 2018). For example, performing lipid panel, and educating the patient regarding the results and negative health effects of having an abnormally elevated LDL-C level that may activate the patient's perceived threat and perceived benefit.

Another cue that may lead to the patient's action is to place figures depicting the process of arterial plaque formation in the examining rooms, and easy to read (*i. e.* limited health literacy-appropriate) and easy to understand written material on dyslipidemia and its treatment. In this way, patients can be exposed to this material and gain awareness, prior to the visit with the provider to stimulate a conversation on this topic.

<div align="center">

Cardiovascular Disease and the HBM

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Dyslipidemia is part of a conglomerate of disease conditions that may result in negative health consequences related to cardiovascular diseases (CVDs). These disease conditions include diabetes, hypertension, peripheral vascular disease, heart failure, stroke, arrhythmias, and others (Goong, Ryu, & Xu, 2016). The application of the HBM is useful in assessing the adherence to treatment recommendations for CVDs related conditions (Goong et al., 2016).

HBM has been employed in investigating the factors that influence behaviors that may prevent or delay the onset of chronic disease conditions, such as hypertension, which are associated with CVDs, or behaviors that affect disease management adherence (Al-Noumani el al., 2019). Management of hypertension, and other chronic disease conditions, includes the use of lifestyle modification skills and pharmacologic interventions (Ma, 2018). Lifestyle modification includes adopting a low-fat, low-sodium diet, increasing physical activity, and weight management (Ma, 2018).

Pharmacologic therapy has been extensively used for the treatment of hypertension and other CVDs and is vital for individuals for whom lifestyle modifications present a challenge. Effective pharmacologic hypertension management has been linked to considerable improvements in patients' health outcomes, namely blood pressure control and reduction of risks associated with hypertension (Al-Noumani el al., 2019). Adherence to medication is central to the management of this condition and is closely associated with a variety of factors that necessitate the individual's understanding of the implications and risks of non-adherence (Al-Noumani el al., 2019). A patient's beliefs about the disease and its treatment are strong predictors of adherence to medications (Al-Noumani el al., 2019). Self-care behaviors, expressed by patients with hypertension, have been found to have a profound effect in the role played in managing this condition (Ma, 2018).

Furthermore, explaining and predicting health behaviors have been linked to positive health outcomes (Caya et al., 2019). The use of the HBM may discover the factors that hinder or promote treatment compliance in adopting positive health behaviors, which would lead to positive health outcomes (Caya et al., 2019). Health promoting strategies that target health beliefs of people who have poor knowledge, limited health literacy, and CVD-related

comorbidities can be beneficial in initiating and maintaining positive health behaviors that reduce morbidity and mortality associated with these conditions (Goong et al., 2016; Schrauben et al., 2020).

Application of Theoretical Framework to Evidence-Based Practice Intervention

All the concepts of the HBM can be applied in an evidence-based practice (EBP) intervention project aimed to increase the disease knowledge and health beliefs of adult and elderly Hispanic primary care patients with dyslipidemia. The individual's health beliefs and self-care behaviors can be affected by having poor knowledge, inappropriate health beliefs, and a lack of understanding of health-related materials regarding dyslipidemia. As such, for this EBP project, *perceived susceptibility* is defined by an individual's realizing the negative effects of dyslipidemia and the predisposing risk factors. This perceived susceptibility may be reached when an individual gains specific knowledge of the personal risks related to the negative effects of dyslipidemia, due to cultural (e. g. Hispanic diet, high-fat content diet), lifestyle factors (e. g. sedentarism, smoking), and hereditary factors (e. g. genetics).

Perceived severity is defined as an individual's belief that dyslipidemia is a threat to health. By becoming aware of how dyslipidemia has affected other people they know, an individual may realize that dyslipidemia is a condition that can have a negative impact on one's life. For example, knowing that a friend or relative has suffered a myocardial infarction or a stroke as a result of having elevated LDL-C levels may trigger the realization of the perceived threat of acquiring dyslipidemia, and the accompanying negative consequences associated with this condition.

Once the patients assess the information on the perceived threat and susceptibility, they must believe that treating dyslipidemia will prove beneficial and that any perceived barriers are

surmountable. To achieve *perceived benefits*, providers must educate and increase patients'

knowledge. The educational intervention increased patients' knowledge and awareness of the

existing barriers that may prevent a successful treatment for dyslipidemia. For example, the

researcher explained the costs related to medication to treat this condition and the effort

necessary to manage this disease condition.

Once the benefits and the barriers are perceived in relation to dyslipidemia and its

treatment, the individual can be cued to take action to resolve the perceived threat and barriers to

managing dyslipidemia. The cues that lead to actions can be external in nature, and can include

reading dyslipidemia-related information flyers, watching videos related to this topic, or

conversing with healthcare providers with regards to dyslipidemia.

In the context of this EBP project, the implementation of an educational intervention to

increase knowledge of dyslipidemia has the potential to increase participants' understanding of

the condition, the perceived benefits associated with the management and treatment adherence of

dyslipidemia, and ultimately trigger new self-care behavior changes that will promote the

achievement of positive health outcomes. By applying the HBM framework, the dyslipidemia

educational intervention for adult and elderly Hispanics can assist them in adopting positive

healthcare behaviors and can reverse their poor disease knowledge and unsuitable health beliefs.

In addition, the framework can assist the healthcare provider in understanding the individuals'

consideration of the risks and benefits associated with the adoption of positive health-related

behaviors (Caya et al., 2019). Finally, the HBM represents a pivotal model in health education,

and its use is highly correlated with positive health behaviors (Daryani, Shojaeezadeh, Batebi,

Charati, & Naghibi, 2016).

Definition of Practice Change Concepts

The application of an evidence-based practice (EBP) educational intervention for adult and elderly Hispanic primary care patients with dyslipidemia to increase disease knowledge and health beliefs can result in positive health outcomes.

According to Fineout-Overholt, English Long, and Gallagher-Ford (2019), EBP is meant to integrate the evidence learned from research with the expertise gathered from clinical practice, combined with the patient's predilections and morals, to promote changes that are aimed at improving healthcare. Practice change can be undertaken by engaging in EBP measures at all levels of the healthcare environment including the clinicians, staff, and stakeholders involved in the change (Rodgers, Brown, & Hockenberry, 2019). The practice change concepts that will be measured for this EBP change are knowledge and health beliefs.

Knowledge

Knowledge, according to Merriam-Webster Dictionary (2019) is defined as "the fact or condition of knowing something with familiarity gained through experience or association" (para. 1). Acquisition of knowledge permits the discovery of new information and new possibilities, which can affect the way healthcare services are delivered (Andrade, Silva, & Correia Martins, 2017). This EBP educational intervention provided a way to clearly understand what this newly acquired information entailed. Patients' comprehension of the negative effects of untreated or poorly managed dyslipidemia, including the threats to experiencing CVDs, is a measure of knowledge. Furthermore, knowledge is acquired when adult Hispanic primary care patients can explain the newly learned information in their own words, thus assuring modifications in the comprehension and promoting self-care behaviors that could positively

affect health outcomes. With proper health education, people can make informed health decision to improve their health outcomes (Miller, 2016).

In the context of this EBP educational intervention, *knowledge* is defined as the acquisition of new information on dyslipidemia. This knowledge includes becoming aware of the risk factors for dyslipidemia, the levels of lipids that are desirable for good health, and the treatment modalities for dyslipidemia.

Health Beliefs

In managing chronic disease, approximately 50% of patients do not adhere to the advice made by their clinicians (Miller, 2016). Failure to adhere to treatment is affected by a variety of factors: (a) patients' understanding of their disease process, (b) how they perceive this disease will affect their lives, (d) their personal health beliefs if the recommended treatment regimen will benefit them and will be efficacious as prescribed, and (e) the barriers encountered, such as cost and side effects (Miller, 2016).

A person's health beliefs can influence what they think, what they say, and how they act regarding a particular health condition, which is affected by their perceptions of disease severity, their susceptibility, and benefits of treatment (Daryani et al, 2016). Various educational programs that focus on improving health beliefs, based on the HBM, often target perceived barriers and can result in profound effects in altering health behaviors (Daryani et al, 2016). The way individuals perceive their healthcare has a direct effect on poor decisions and behaviors. Identifying and correcting erroneous beliefs and perceptions can be used to adopt health-protective behaviors (McArthur, Riggs, Uribe, & Spaulding, 2018). Finally, an individual's health beliefs also affect the beliefs of those around them, such as family members and relatives,

friends and associates because the healthcare system does not just involve one person, but a community of people (Caya et al., 2019).

<p style="text-align:center">Significance of the Evidence-Based Practice Project</p>

Practice

Nursing practice, and healthcare practice can benefit from interventions aimed at improving patients' knowledge, particularly disease knowledge about dyslipidemia. Enhancing the patient's knowledge, beliefs, and behavior can play an important role in the prevention and management efforts of chronic diseases (Tsou, 2017). In the elderly population, awareness of the concerns and knowledge possessed regarding chronic disease conditions can alter health-related behaviors (Tsou, 2017). This knowledge can further be utilized and designed in clinical practice for adequate use for, and by the elderly individuals, regardless of location, socioeconomic status, or education level (Tsou, 2017).

Nursing practice can utilize the implementation of EBP knowledge improvement interventions, which address ways to improve understanding of health-related materials by refining health services, increasing quality of care, and decreasing health inequalities (Batterham, Hawkins, Collins, Buchbinder, & Osborne, 2016). This project aims to address the limitations in practice that exist in the adult Hispanic population regarding the disease knowledge and health beliefs on dyslipidemia, including the application of research findings of best practices to the vulnerable and growing Hispanic or Latino population. The development of enhanced tools in their native language to address the deficiencies in disease knowledge experienced by this population was also a goal of this project. The resulting intervention will improve the current practices regarding the patient's acquisition of knowledge and health beliefs about dyslipidemia.

Healthcare Outcomes

The definition of *healthcare outcomes* varies, but it is generally accepted as the changes made in health resulting from specific applied measures and interventions (Canadian Institute for Health Information, 2019). Implementing dyslipidemia education for adult and elderly Hispanic primary care patients has the potential to affect healthcare outcomes positively by improving knowledge and self-management skills (Andrade et al., 2017). Older adults, including those in the Hispanic or Latino population, have a predominantly higher rate of poor disease knowledge and health literacy, which places these patients at risk for negative health outcomes (Andrade et al., 2017; Schrauben et al., 2020; Turner et al., 2017). The maximization of positive health outcomes in the adult and elderly population can be addressed by increasing education, thus creating a positive impact on healthcare and on society (Andrade et al., 2017).

Healthcare Delivery

The delivery of healthcare is intimately related to the practice of nursing. Healthcare delivery relates to providing healthcare and is a function of the actions performed by health care professionals to improve the people's health (Moriates & Arora, 2018). Much of the focus in the way healthcare delivery can be improved is on the education of medical professionals to provide quality healthcare services (Moriates & Arora, 2018). However, the population being serviced cannot be forgotten because the efforts of good healthcare delivery could be lost if those served are lacking the skills necessary to understand and to process the information being conveyed (Batterham et al, 2016). Improving knowledge, along with health beliefs, therefore, is of paramount importance in achieving the highest levels of awareness, thus allowing individuals to be empowered and to become participants in their own health care (Batterham et al, 2016). This EBP education intervention, and the strategies developed and aimed at increasing knowledge can

have a positive impact in the quality and delivery of healthcare to all populations because they can be applied broadly to vulnerable populations and individuals.

Healthcare Policy

Improving a population's knowledge and health beliefs are valuable goals and aid in creating healthcare policy changes that positively impact society (Weishaar, Hurrelmann, Okan, Horn, & Schaeffer, 2019). The process of creating healthcare policy is complex and is meant to lead to the adoption of effective and reasonable health policy (Payán & Lewis, 2019). Furthermore, policy makers must employ a variety of tools and evidence-based knowledge to navigate the complex process of healthcare policymaking, and the use of frameworks has served to provide direction to ensure decisions are consistent and fair (Razavi, Kapiriri, Wilson, & Abelson, 2020). Policy makers, clinicians, and healthcare consumers can utilize the learned information from evidence-based interventions aimed at closing the gap in translation between research and practice and promote a sensible policymaking process with a clearer understanding of the research evidence (Payán & Lewis, 2019).

The information obtained from this EBP project on dyslipidemia can aid policymakers and stakeholders to address the disparities that exist among vulnerable populations, particularly the U. S. Hispanic and Latino population (Rodriguez et al., 2014). The association of knowledge and health literacy issues, with their framework on a global scale, can initiate important and necessary political debates that could assist in the development of policies and systemic solutions that address the negative health effects experienced with having these issues (Weishaar et al., 2019; Schrauben et al., 2020). The importance of this EBP DNP project is, therefore, obvious in attempting to improve the knowledge and health beliefs of the population in question, thus

adding to the discourse that is necessary to move policy forward regarding this healthcare issue, not only at the local, but also the national and global level.

Summary

Adequate knowledge and health beliefs are important topics in healthcare and can be viewed as predictors of health outcomes and the utilization of healthcare services. Vulnerable members of society, such as the elderly and the Hispanic/Latino population, need to be engaged by healthcare workers in developing and implementing interventions that result in an improvement of their health-related knowledge and health beliefs. Dyslipidemia is important due to the negative consequences associated with this condition, including heart disease and stroke. Improved disease knowledge can expand the understanding and adherence to dyslipidemia related treatment, thus improving the utilization and quality of health services and patient outcomes.

Using the HBM as a theoretical framework for this project can aid in providing effective means of discovering the necessities and challenges that exist for improving the health knowledge in the adult and elderly Hispanic/Latino population. Increasing knowledge regarding dyslipidemia, its negative health effects, and the benefits of treatment is vital to achieving this important goal. Tangible benefits in practice, healthcare delivery, healthcare outcomes, and healthcare policy can come from the implementation of knowledge and health beliefs improvement interventions. Educational interventions may be employed to include interaction with participants, to increase and improve the participant's levels of knowledge in the populations addressed and positively affect their health beliefs.

Chapter Two: Review of the Literature/Evidence

This chapter discusses the methodology used for the literature search on disease knowledge (DsK) and health beliefs, and reviews evidence that supports deficient DsK and health beliefs as a public health problem, particularly in the adult and elderly Hispanic/Latino population and provides best evidence for addressing deficient DsK and health beliefs in practice.

The literature search provided valuable information on the topic's scope and the gaps that may exist in the literature (Betz, Smith, Melnyk, & Tassa, 2019). Furthermore, the literature search serves to provide new understandings on the topic of interest and promote new questions that may have not be thought of before (Betz et al., 2019).

Clinical Question Guiding Inquiry (PICO)

Does an educational intervention for middle aged and elderly Hispanic primary care patients with dyslipidemia increase disease knowledge and health beliefs about dyslipidemia?

Search Strategies

A systematic search of the literature was performed in seven electronic databases, including: ScienceDirect, Medline, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Cochrane Library, PubMed Health, Google Scholar, and Google Chrome. Also, the UpToDate website was used to search for the most current dyslipidemia-related health literacy content. Other content-pertinent searches were performed using current nursing science textbooks. The literary searches were focused on peer reviewed, full text research and review articles; published between 2015-2020; written in English, with no limitation to the article's geographical origin. The search strategy included a combination of keywords and phrases such as: *knowledge, disease knowledge, health beliefs, health literacy, low health literacy, adherence,*

self-management, Hispanic disease knowledge, senior disease knowledge, dyslipidemia, health belief measurements, measurements of knowledge, health improvement, health belief model, chronic diseases and knowledge improvement. A limited number of articles were included in the selection, even though they did not relate directly to the issue of dyslipidemia, but expressed the relationship between knowledge and health literacy, disease knowledge, and the management of other chronic diseases such as cardiovascular diseases, hypertension, and diabetes (Al-Noumani et al., 2019; Brunk et al., 2017; Ma, 2018; Perez, 2015; Quartuccio et al., 2018; Schrauben et al., 2020). The initial search resulted in 350 articles. Forty-nine articles were subsequently reviewed, and 31 articles were ultimately selected for the literature review. The inclusion of these 31 articles was based on the following inclusion criteria: (a) studies focusing on knowledge improving educational interventions, (b) studies that addressed the impact of improved health beliefs on health outcomes, (c) studies targeting the elderly, the Hispanic population, or other vulnerable populations, (d) studies with the full text written in English, (e) studies addressing dyslipidemia and/or cardiovascular disease (CVD) effects from dyslipidemia, and (f) studies addressing the use of the health belief model.

Literature Review Findings

The Meaning of Disease Knowledge in Healthcare

Disease knowledge (DsK) and health literacy (HL) have occupied important roles in healthcare, given the negative effects they have had for the health of those individuals possessing poor DsK and limited HL (Chesser, Keene Woods, Smothers, & Rogers, 2016). It has been noted that poor DsK can become barriers to the individual's engagement in healthy behaviors, effective use of preventative health services, and the management of acute and chronic illnesses, resulting in poor health outcomes (Chesser et al., 2016).

Furthermore, having deficiencies in DsK have placed individuals in the unfortunate position of experiencing increased of health care costs by engaging in health behaviors that lead to increased morbidity and mortality (Chesser et al., 2016). Also, individuals with poor DsK and limited health literacy may be unable to clearly understand and to follow the instructions given by the healthcare personnel. They may emergency services more often and have greater chances of experiencing negative health consequences from chronic disease conditions (Chesser et al., 2016).

Inadequate Disease Knowledge on Vulnerable Populations

Vulnerable populations find themselves at a great disadvantage when dealing with health-related issues, having limitations and unique challenges in negotiating the healthcare environment and the managing their own health care (Chesser et al., 2016). Older adults, for example, may be faced with age-related changes including decreased cognition, hearing and vision loss, which can result in diminished knowledge and health literacy skills (Chesser et al., 2016). Comprehension and processing of new health information is decreased when older adults experience limitations in health literacy, which is intimately associated with deficient DsK (Chesser et al., 2016).

The Hispanic population is also vulnerable to the effects of inadequate DsK is (Romero et al., 2016). Partially due to the limitations of English language proficiency, this group has experienced decreased levels of DsK that can lead to poor health outcomes (Romero et al., 2016). The Hispanic population can also be negatively affected in having decreased DsK and limited HL, especially when it comes to cardiovascular disease (CVD) conditions (Soto Mas, Schmitt, Jacobson, & Myers, 2018). Compared to other ethnic groups, Hispanics have been found to have gaps in awareness and understanding specific CVDs, making this population more

vulnerable to using healthcare services less often and suffering negative health outcomes (Soto

Mas et al., 2018). Culture also plays an important role in the way that Hispanic adults experience

healthcare (Perez, 2015). Hispanic adults must adapt and adopt the culture of the country where

they live and develop adaptive behavioral changes (Perez, 2015). This phenomenon, referred to

as acculturation. As people are exposed to another culture, they must alter their behavior by

integrating new beliefs and values, while maintaining the basic values and behaviors from the

original culture (Perez, 2015).

Acculturation, limitations in HL, and deficiencies in DsK among Hispanic adults work

together to play a pivotal role in the perceptions of chronic illnesses related to cardiovascular

conditions, such as hypertension. Understanding the degree of acculturation could be used to

create health promotion interventions specific to the management of cardiovascular related

conditions (Perez, 2015).

Education and Inadequate Disease Knowledge

Educating patients is relatively new practiced concept in today's healthcare environment

(Wittink & Oosterhaven, 2018). The education of patients in healthcare, however, demands to be

specific to meet the persons' individual needs (Wittink & Oosterhaven, 2018). Moreover, higher

levels of education have been linked to increased understanding of chronic disease conditions

and makes disease management more efficient (Sui & Ahmed, 2010). Improving people's DsK

and skills for managing their disease condition have been associated with enhancements in their

quality of life (Wang, Tan, Xiao, & Deng, 2017). Disease-specific self-management education

(SME) is a commonly employed behavior change technique (BCT) for patients with chronic

illnesses and is effective in achieving improvements in patient's health outcomes (Wang et al.,

2017). Therefore, interventions that address deficiencies in DsK, via providing education

including SME, are necessary to increase the individuals' DsK, particularly in conditions such as heart-related diseases and diabetes mellitus with high morbidity and mortality (Digkliou, Kazakos, Kotsa, & Goulis, 2016; Sui & Ahmed, 2010; Wang et al., 2017).

Measurements of Disease Knowledge

The use of various methods, including questionnaires to assess disease-specific knowledge has been utilized in a variety of studies aiming to address the correlation between DsK deficiencies and disease management (Digkliou et al., 2016). Surveys that evaluated the individual's disease-specific knowledge can be used to measure a disease-specific QoL score. The score can be utilized to direct initiatives to improve patient education of a particular disease condition (Suckow et al., 2016).

In the context of this EBP project, the literature indicated that the DsK measurement is beneficial in understanding and in identifying the capacities of individuals and communities to effectively make decisions regarding their healthcare, which further support the necessity to conduct evidence-based interventions for this population (Batterham et al., 2016; Chesser et al., 2016).

<center>**Literature Review Synthesis**</center>

This literature review includes primarily quantitative and qualitative studies, and systematic reviews (Al-Noumani et al., 2019; Andrade et al., 2017; Batterham et al., 2016; Wang et al., 2017). Participants in the reviewed studies included adults and the elderly population, mostly ranging in the ages of 18-74 years old (De Alba, Britigan, Lyden, & Johansson, 2016; Koops van 't Jagt et al., 2016; Ma, 2018). Data collection methods included interviews, systemic reviews of the literature, and questionnaires (Ma, 2018; Oliveira et al., 2019; Quartuccio et al.,

2018). Instruments to test validity and reliability included analysis of variance (ANOVA),

Pearson correlation, and chi-square (Harris et al., 2017; Smith et al., 2015).

Al-Noumani et al. (2019) performed a systematic review of 30 quantitative studies using

the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines,

to study the relationship between health beliefs and medication adherence in hypertension

(HTN). Findings indicated that fewer perceived barriers like medication side-effects and higher

self-efficacy were significantly related to higher medication adherence, which could be applied

to other chronic disease conditions, including diabetes and dyslipidemia (Al-Noumani et al.,

2019; Brunk et al., 2017; Ma, 2018; Soto Mas et al., 2018).

Another systematic review of the literature provided additional evidence of the

association between specific-disease knowledge obtained via self-management educational

intervention and improvements in health outcomes (Wang et al., 2017). These researchers found

that self-management education was important in improving health-related quality of life in

patients with chronic obstructive pulmonary disease (COPD) and reduced improper utilization of

health services, including emergency department visits (Wang et al., 2017). The implications of

this research provided vital information to be used in managing COPD and other chronic

diseases, including cardiovascular diseases (Wang et al., 2017).

Literature Strengths and Weaknesses

The literature indicated the association between the knowledge individuals possessed,

their limited HL, and the negative health outcomes for a variety of populations and disease

conditions (Carollo, 2015; De Alba et al., 2016; Geboers et al., 2015; MacLeod et al., 2017;

Schrauben et al., 2020; Wang et al., 2017). This association indicated that an improvement in one

aspect of the individual's education and knowledge of a particular health condition resulted in

the enhancement of their health literacy skills and level, and consequentially improved their

health outcomes (Schrauben et al., 2020; Schiele et al., 2019; Wang et al., 2017).

The literature also provided further understanding of the challenges that exist in

improving knowledge and health literacy in a variety of vulnerable populations (Chesser et al.,

2016; Harris et al., 2017; Koops van 't Jagt et al., 2016; Soto Mas et al., 2018). Also, efforts to

improve the individual's health beliefs using disease knowledge enhancements through

education exposed the challenges and barriers to this practice and recognized the health beliefs

model (HBM) as a valid and reliable health education model (Daryani et al., 2016).

The weaknesses in the literature included the assessment of culturally sensitive material

for Spanish speakers only (Harris et al., 2017). Also, the determination of vulnerable populations

(*e. g.* older adults, women, Hispanics) was inconsistent throughout the literature searched

(Chesser et al., 2016; Harris et al., 2017; Koops van 't Jagt et al., 2016; Soto Mas et al., 2018).

Other weaknesses found in the literature included the lack of information on specific

interventions regarding dyslipidemia in the Hispanic population and the poor knowledge that

exists concerning the determinants and the prevalence of this condition in Hispanics (Rodriguez

et al., 2014).

Literature Gaps

Various researchers attempted to determine the relationship of limitations in health

literacy, knowledge, health beliefs, and negative health outcomes (Carollo, 2015; Geboers et al.,

2015; MacLeod et al., 2017; Schrauben et al., 2020). Although researchers concentrated their

attention and efforts in uncovering the intricacies of this relationship, addressing the

dyslipidemia issue from the perspective of the Hispanic/Latino population lacked attention. The

studies that focused their attention on the Hispanic/Latino population targeted culture and health

literacy from other perspectives, including comprehension of the material presented to the participants and health beliefs (Harris et al., 2017; Soto Mas et al., 2018; Rodriguez et al., 2014; Romero et al., 2016; Schrauben et al., 2020).

Utilization of Findings

In the context of the EBP educational intervention project to address DsK and health beliefs on dyslipidemia, the findings in the literature can be utilized to draw conclusions and inferences as to the application in the practice environment.

Generally, educational programs and direct patient education can be implemented to address patients' identified knowledge deficiencies and limited health to increase the accessibility eHealth services and to modify patients' health beliefs. For example, such programs could address perceived susceptibility of disease and perceived benefits of engaging in self-care behaviors that can result in positive health outcomes (Caya et al., 2019; Kim & Xie, 2017; Schrauben et al., 2020).

Efforts to enhance knowledge and health literacy in older adults can be obtained by employing educational interventions that lead to an improvement of both variables and can be beneficial in the care of this population. Healthcare costs could be reduced, in association with an improvement in the relationship and approval of both the patient and the provider (Chesser et al., 2016; Schrauben et al., 2020). The use of educational interventions aimed at increasing disease-specific knowledge can potentially reduce the challenges and barriers faced by vulnerable populations with inadequate DsK and limited health literacy skills (Koops van 't Jagt et al., 2016; Romero et al., 2016; Schrauben et al., 2020). The Hispanic population and those with limited English proficiency (LEP) can benefit from educational interventions made to reduce disparities associated with knowledge, literacy, and language (Harris et al., 2017).

The development of effective interventions to address knowledge of CVD and health literacy can be made using a multilevel education and health approach that targets the unique needs of the immigrant community of Spanish speakers (Soto Mas et al., 2018). Health care providers can use this evidence to improve communication between patients and clinicians, and achieve patient empowerment, in efforts to improve understanding of the health care challenges that are faced by vulnerable populations with deficient knowledge and limited health literacy (Carollo, 2015; MacLeod et al., 2017; Romero et al., 2016; Schrauben et al., 2020).

Furthermore, identifying strategies that lessen the negative effects of inadequate knowledge and limited health literacy, and addressing the individual's health beliefs can prove beneficial to vulnerable populations, including the potential benefits in the adherence to treatment element of healthcare and related health outcomes (Geboers et al., 2015; Romero et al., 2016; Schrauben et al., 2020).

Additional support is recommended in the literature for other studies on the inadequate knowledge and limited health literacy issues with the vital assistance of government and private funding to evaluate the factors associated with these variables, including gender, age, country of origin, ethnicity, cultural beliefs, and health beliefs to develop better interventions for improving the population's health outcomes (Chou & Shih, 2018; De Alba et al., 2016; Perez, 2015; Romero et al., 2016; Schrauben et al., 2020; Soto Mas et al, 2018).

Summary

This chapter presented a review of the literature. The reviewed literature focused on the topics of DsK and limited health literacy for a variety of disease conditions, from the acute to the chronic, and described the how addressing knowledge improvement, via educational interventions, can potentially result in the enhancement of disease-specific knowledge. Also, the

individual's health-related quality of life and overall health outcomes can be improved by addressing the deficiencies in knowledge. Concomitantly, advances in health literacy can be made by addressing DsK improvements, which can carry into other areas of a person's life with benefits to overall wellbeing. With respect to dyslipidemia, DsK deficiencies in vulnerable populations can be addressed by conducting specific educational interventions aimed at improving the knowledge and understanding of the disease condition. Particularly, in vulnerable populations, such as Hispanics and the elderly, this effort can decrease health inequality and can potentially improve the health utilization and cost for these populations. Gaps in the literature should serve as a stimulus for researchers to conduct additional studies that are necessary to fully address these issues and to discover the intricacies that are apparent in the improvement of DsK, health beliefs, and health literacy in the adult Hispanic population with dyslipidemia.

Chapter Three: Methodology

This chapter describes the methodology for this evidence-based practice (EBP) educational intervention project regarding poor disease knowledge (DsK) and health beliefs on dyslipidemia.

Purpose of the Project

The purpose of this evidence-based practice educational intervention is to improve the knowledge and health beliefs of Hispanic and elderly adult primary care patients with dyslipidemia.

Project Management

Organizational Readiness for Change

This EBP educational intervention project was carried out in a primary care medical setting. Particularly, this was be done at a private practice office, where the medical providers consisted of a medical doctor (MD) who specializes in internal medicine, and an advanced practice registered nurse (APRN) who specializes in adult-gerontology primary care (A-GPC) practice. The researcher, who is the APRN at the clinic, approached the identified organization's administration, as well as the medical director, and explained the need for this EBP project. The researcher based the request after encountering several middle-aged and elderly Hispanic patients with deficient disease knowledge. These patients had been diagnosed with dyslipidemia and had demonstrated challenges in their attitudes and health-related beliefs regarding their disease condition.

Subsequently, the clinic expressed interest in this EBP project and recognized that the EBP project would be valuable by increasing DsK and by improving the health beliefs of middle-aged and elderly Hispanic patients with dyslipidemia. Agreement for the project was be

obtained from the medical director of the practice, the administrators, medical assistants, and other staff members. The EBP educational project was in alignment with the mission, vision, and values of the organization, which emphasize, above all, the delivery of efficient, high quality primary care services to their patients. The clinic strives to develop a collaborative relationship between the patient and medical provider.

Interprofessional Collaboration

Interprofessional collaboration was needed between the EBP project implementer, the medical director of the practice, the practice administrator, medical assistants, and other medical office staff members during the planning, implementation, and evaluation of the project. This collaboration was achieved by conducting regular meetings, during pre-work hours, with the administrators and staff involved in the project, to keep them abreast of the progress towards the planning, implementation, and evaluation of the project, and to delineate the roles and responsibilities of each member to successfully complete the project.

Open communication and collaboration with the clinic's medical director, acting as the preceptor, were also a vital component to the success of the DNP project. Furthermore, the input given by various collaborators outside of the primary care practice, such as the independent living facilities' service coordinators and Hispanic community leaders, helped to expand the knowledge base, and helped to provide a foundation for strong community ties, which was necessary for the success of the proposed DNP project.

Risk Management Assessment (SWOT Analysis)

A comprehensive analysis of the strengths, weaknesses, opportunities, and threats (SWOT) was performed to identify the areas of the project's planning and implementation that needed to be addressed for the success of the EBP educational intervention project. The strengths

and weaknesses represented the internal factors that could affect the proposed project, whereas the opportunities and threats embodied the external factors that could potentially impact the project.

Strengths. The project's implementer is fully bilingual (Spanish/English), which was beneficial in his to effectively communicate with the potential participants. This strength was, therefore, to be used to minimize the language barriers that represented a potential threat to the implementation of the project. Furthermore, the project implementer's knowledge and experience regarding dyslipidemia and his ability to convey accurate and updated information on its treatment was a noted strength of the proposed project. An opportunity was included in the project's implementer's ability of the to review the participants' data collected without restrictions to the patient's electronic medical records (EMR) or violations to their privacy and confidentiality. Finally, stakeholders, who represented the community, exhibited a willingness and eagerness to support the project. This factor was a motivational area that can be further utilized in the planning and implementation of this EBP project.

Weaknesses. Among the identified weaknesses for the EBP educational intervention project was the participant's individual lack of motivation to improve their knowledge level regarding the information on dyslipidemia. First, the project needed increase the knowledge level of each participant. Simultaneously, the participants needed to combine newly acquired health literacy skills with the recently gained knowledge on dyslipidemia necessary for their understanding of this condition. Only then could they effect the behavioral changes to improve their health beliefs and attitudes towards dyslipidemia.

Inherently, the EBP project was faced with two main barriers: (a) difficulties in attending the educational interventions due to transportation problems, and (b) participants' illnesses.

These factors affected the data collection by the implementer and prolonged the delivery of the intervention.

Finally, threats to the implementation of this EBP project included non-compliance with the treatment and management recommendations regarding dyslipidemia. Some of the factors that may likely affected compliance included cultural factors, advanced age, perceived wisdom, and a lack of understanding that failing to adhere to the dyslipidemia treatment could result in negative consequences (see Appendix C).

Information Technology

Information technology tools were employed in the planning, implementation, and evaluation of the EBP educational intervention project. The systematic literature search was conducted using university's library electronic databases to find necessary information. The Internet was used to search for videos in YouTube, and pictures from Google that were employed in in educating the project participants. Also, email communications were used to convey and discuss the information found between the project implementer, the preceptor, the medical practice's staff members involved in the project, and the outside stakeholders.

Furthermore, the medical practice's EMR was extensively used to identify potential candidates to recruit for participation in this EBP project. Also, the creation of flyers, letters, survey forms, and PowerPoint presentations involved the use of computer laptops and desktops, projectors, and television screens, to aid in implementing this project. Finally, Microsoft program Excel was employed to organize and to arrange the data and to facilitate the subsequent data analysis. The data analysis was done by using the version 25 of the IBM's Statistical Product and Service Solution (SPSS) software program. This software program was available to the project's implementer.

Project Budget

Costs associated with the planning, implementation, and evaluation of the EBP project, included material for printing, including the printer's ink, paper, pencils for completing surveys, and snacks and water for the participants after the presentations. Furthermore, additional costs included the editor, the statistician, and the paper and binding of the manuscript (see Appendix C).

Design of Intervention

The purpose of this evidence-based practice educational intervention was to improve the disease knowledge (DsK) and health beliefs of Hispanic and elderly adult patients with dyslipidemia in primary care. Knowledge, particularly DsK, was measured using a pre- and post-intervention questionnaire adapted for use in the target population. Health beliefs were measured with a pre- and post-intervention questionnaire, which was adapted for use in the target population.

The intervention consisted of a series of educational presentations on dyslipidemia that used pictures, videos, and a narrated slide presentation aimed at improving the knowledge of dyslipidemia. The presentations covered the causes, the negative consequences and health effects, the benefits of addressing and preventing this health condition, and activities to improve health behaviors and health outcomes.

Setting

The setting for the proposed DNP project took place in a primary care medical center located in central West Florida. The primary care practice was a private internal medicine practice that served primarily the adult and gerontology community. The practice served a growing population of patients, ranging in age from 23 to 91 years old. Agreement for the

proposed DNP EBP project was obtained from the key stakeholders, which included a social charitable organization in the state and several independent living facilities (ILFs) where many of the individual study participants were residents.

Sample

Approximately 79% ($n = 88$) of the patients in the primary care practice were Spanish speaking and identified themselves as belonging to a Hispanic background or ethnicity. Individuals, between the ages of 50-85 years old, who were diagnosed with having some form of cholesterol abnormality were invited to voluntarily participate in the EBP.

Inclusion Criteria

The inclusion criteria for the DNP project included the following (a) aged above 55 years old, (b) Hispanic, or of Hispanic descent, (c) could read and write in either Spanish or English, (d) had been diagnosed with elevated serum total cholesterol and elevated low-density lipoprotein (LDL-C), and (e) who had poor disease knowledge and limited health beliefs about dyslipidemia.

Exclusion Criteria

The exclusion criteria included (a) individuals who were not Hispanic (or Hispanic descent), (b) who were not able to read and write in either Spanish or English, and (c) possessed sufficient disease knowledge and appropriate health beliefs about dyslipidemia, and (d) had normal serum lipid levels.

Recruitment Procedure

Participants who meet the inclusion criteria were recruited via telephone. The participants were then informed about the purpose of the project and were invited to voluntarily participate in the DNP project. Individuals who agreed to participate in the project were invited to an initial

meeting where they were given a participant's cover letter (see Appendix D) containing a brief explanation of the project. Questions were answered including the purpose of the project and they were provided with a consent form (see Appendix E).

Sample Size

The project implementer had determined, via power analysis, that a sample size of 35 participants was sufficient for achieving the desired significance ($p \leq .05$).

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Data Collection Procedures

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Instrumentation

The short version of the Diabetes Knowledge Questionnaire (DKQ-24) was used to measure the disease knowledge (DsK) of the project participants (Garcia, Villagomez, Brown, Kouzekanani, & Hanis, 2001). Permission to use and adapt this tool was obtained from the questionnaire's principal author, Dr. Alexandra A. Garcia. This version of the questionnaire was derived from the original DKQ, which is a 60-item questionnaire to assess a participant's knowledge regarding diabetes (Garcia et al., 2001).

The short version of the DKQ-24 consists of 24-items designed to assess overall diabetes knowledge at baseline and after the implementation of a diabetes educational program (Garcia et al., 2001). The response choices for this instrument consist of: (a) *Yes*, (b) *No*, and (3) *I don't know*. Each item scored as either correct or incorrect and the total score equaled the percentage of correct answers (Garcia et al., 2001). An example of a question used in the questionnaire is: "1. Eating too much sugar and other sweet foods is a cause of diabetes." (a) *Yes*, (b) *No*, and (c) *I don't know* (Garcia et al., 2001, p. 20).

This questionnaire was adapted to fit the needs and requirements of the current EBP educational project by making the content questions appropriate to the subject matter and

knowledge of dyslipidemia. The wording of the questions was adjusted to address dyslipidemia issues while maintaining the question format intact. An example of a question adjusted and adapted for this purpose is: "Eating too much fat and cholesterol is a cause of dyslipidemia." (a) *Yes*, (b) *No*, and (c) *I don't know*. A paired *t*-test was used to determine the group comparative means.

Health beliefs were measured using an adapted version of the Diabetes Related Health Beliefs questionnaire (Brown, Becker, Garcia, Barton, & Hanis, 2002). The adapted questionnaire consists of 25 health beliefs and health related questions that measure beliefs related to diabetes ("Health Beliefs Questionnaire English/Spanish", n.d.). The questions posed to the participants were adapted to suit the purpose of measuring health beliefs regarding dyslipidemia. For example, a question that originally stated: "My diabetes is well controlled" ("Health Beliefs Questionnaire", n.d.) was adapted to state: "My cholesterol is well controlled". The answers to each question consisted of a Likert scale that included the choices: 5 = *Strongly Agree*; 4 = *Agree*; 3 = *Not Sure*; 2 = *Disagree*; 1 = *Strongly Disagree*.

Permission to use and adapt the health beliefs survey instrument was obtained, by the project's implementer, from Carol Brownson, Deputy Director of the Diabetes Initiative National Program Office. She is authorized to grant permission to use or adapt the questions for the DNP project.

Validity and Reliability

Validity is an important component of research because it is an indication of the soundness of a research. The DKQ-24, in its original format, has a reliability coefficient of 0.78 (Garcia et al., 2001). The Diabetes Related Health Beliefs questionnaire also has a reliability coefficient of 0.65 to 0.90 for revised subscales (Brown et al., 2007).

Data Management and Storage

The paper questionnaires were scanned and stored in the computer and the data from the

questionnaires were transferred to an Excel spreadsheet and uploaded to SPSS Version 25 for

subsequent statistical analysis. The raw data was entered into SPSS for statistical analysis; the

results and the raw data have been stored on a password protected computer at the project

implementation site. The computer was used solely by the project implementer and all files

within this computer system were protected by a password known only to the project

implementer and the facility administrator. The files specifically dedicated to the EBP project

were protected with a password known only to the project's implementer and the mentor.

Additionally, data were stored on a digital mass storage portable device (*i. e*. external

hard drive) that was password protected and kept in a secured, locked file cabinet at the

implementation site. The password used for the protection of the digital mass storage device was

only be known by the project's implementer and the mentor. Access to this device was for

storing further data and information obtained during the implementation and analysis phase of

the project. The project's implementer kept the key to the locked file cabinet containing the

paper questionnaire, the computer, and the mass storage device in a secure area at the project's

implementation site.

Data Analysis

Knowledge

The practice change concept measured in the DNP project was knowledge. The

Dyslipidemia Pre-Educational Intervention Questionnaire and the Dyslipidemia Post-Educational

Intervention Questionnaire were used to measure the participant's knowledge of dyslipidemia.

These questionnaires were given to the participants at the beginning and at the end of the three

educational intervention sessions on the topic of dyslipidemia. The educational interventions were each approximately 20 minutes and were focused on a different aspect of dyslipidemia necessary for the participants to gain full understanding of this disease condition. The educational sessions were held in Spanish and used PowerPoint Presentations, developed by the project's implementer. These presentations included pictorials, videos, and written information on dyslipidemia in a bullet format.

The questionnaires were provided to the participants to complete using paper and pencil. The questions were used to determine the participant's general knowledge of dyslipidemia as a disease condition, knowledge regarding the negative consequences of having dyslipidemia, and knowledge of the available pharmacologic treatment of dyslipidemia. Mean scores from the pre- and post-training questionnaires were then compared for individual questions and between groups to determine newly learned information acquisition on dyslipidemia.

The questionnaires included demographic data, such as age, gender, and level of education, which was used to describe and compare the sample population (Kellar & Kelvin, 2013). Furthermore, descriptive statistical data, specifically means and percentages, were obtained from the pre- and post-educational intervention questionnaires to provide comparative means for analysis and to draw conclusions concerning the effect of the educational intervention (Kellar & Kelvin, 2013).

A *t*-test for paired samples was used make comparisons between before and after the intervention. This parametric test is useful when comparisons need to be made from measurements that are from the same group, but at two different times, such as when studying the before and after effect of an intervention (Kellar & Kelvin, 2013).

Health Beliefs

Another practice change concept measured in the DNP EBP project was the participant's health belief in relation to dyslipidemia. Much like knowledge, health beliefs were measured by employing pre- and post-intervention questionnaires. The questionnaires were given to the participants after they have completed the knowledge questionnaires to complete using paper and pencil. The duration for completion of the health beliefs questionnaire was expected to be a maximum of 10 minutes. The questions were used to determine the participant's general health beliefs on dyslipidemia as a disease condition, barriers in relation to the treatment and prevention of this condition, assessment of the fears towards the negative consequences of having dyslipidemia, and the benefits for engaging and compliance with the available pharmacologic treatment of dyslipidemia. Mean scores from these questionnaires were also compared for individual questions and as a group (pre- and post-intervention) to determine differences in health beliefs in relation to dyslipidemia before and after the exposure to the educational information on dyslipidemia.

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Ethical Considerations

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Beneficence

The ethical principle of *beneficence* refers to the belief of performing good and respectable actions to benefit the study participants (Doody & Noonan, 2016). This ethical principle was observed throughout all phases of the DNP project and guided the implementation of the project. First, the researcher gained approval from Nova Southeastern University's (NSU) Institutional Review Board (IRB), The DNP project was an educational intervention aimed to increase the participants' knowledge on dyslipidemia, therefore, improving their health beliefs about the disease condition. The Health Belief Model (HBM) was used to guide the DNP project

to help participants determine the perceived benefits, to achieve the promotion of significant changes in the participant's health beliefs to improve the health outcomes with regards to dyslipidemia.

Confidentiality

Upon approval of Nova Southeastern University's (NSU) Institutional Review Board (IRB), confidentiality and the right to privacy were observed by adhering to strict guidelines of the maintaining confidential information and by employing the use of two unique identifiers to link the survey questionnaires. Confidentiality is described as the responsibility of a delegated third-party to protect an individual's information (Braverman, Shapiro, & Bernstein, 2018). In the case of research, this concept relates closely to informational privacy, or the freedom enjoyed from invasion of personal information (Braverman et al., 2018). Observing these two elements of confidentiality allows the conduction of ethical, sound research (Braverman et al., 2018).

Informed Consent

Informed consent is providing sufficient and adequate information to participants regarding the proposed research study and allowing them the right to decide if to participate in research study (Braverman et al., 2018). Thus, for informed consent to occur, at least three elements must be fulfilled: the disclosure of the study specifics, the participant's capacity to understand and reason through to make decisions based on the information given, and the voluntariness to participate (Braverman et al., 2018). In this project, adequate information was provided to each participant and consent was voluntarily granted by each participant prior to the commencement of the DNP project.

Protection of Participant's Health Information

Safeguarding the participant's protected health information was of paramount importance during all stages the DNP project. To protect this important information, the Health Insurance Portability and Accountability Act of 1996 (HIPAA) was observed taking specific steps to shield participant's health information from being disclosed (CDC, 2018). The pre- and post-intervention questionnaires were anonymous and had personal identifiers that were not linked to any one participant; the computer was password protected; the collected questionnaire data was encrypted; the administrative processes and the highly trained staff ensured the confidentiality of the participants for the project.

Expected Outcomes

The DNP project's goal was to achieve a change in the participant's knowledge of dyslipidemia, including knowledge of the negative effects associated with the condition as they relate to cardiovascular diseases (CVDs). The educational intervention on dyslipidemia was expected to change the participant's health beliefs about the perceived benefit of treatment adherence, which would improve health outcomes.

Summary

This chapter presented the planning and the implementation of the proposed DNP project, which focused on an education intervention to address a vulnerable population's disease knowledge and health beliefs that is necessary to promote changes in their health-related knowledge, health beliefs, and health behaviors related to dyslipidemia. The stakeholders had expressed interest in the EBP DNP project and had demonstrated full support in the implementation of the project.

Knowledge was measured using the adopted and adapted DKQ-24; health beliefs was measured utilizing the adopted and adapted Diabetes Health Beliefs questionnaire. The DNP project employed EBP, and centered on utilizing ethical principles, including beneficence, informed consent, and confidentiality. The DNP project also engaged in interprofessional collaboration with other members of the healthcare team at the primary care setting and influential members of the community, including community leaders and members of the various ILFs where the individual participants resided. Data collection and analysis were carefully performed because this was vital to the success of the project. The project design ultimately hoped to serve to implement an educational intervention to promote changes in the participant's disease knowledge, health beliefs, and health outcomes, and improve the overall health of the population.

Chapter Four: Results and Discussion

Evaluation and analysis of results following the completion of the implementation

process for an educational intervention using evidence-based practices (EBP) is necessary to

assess the project's appropriateness and viability for clinical practice (Grove, 2017). Evaluating

the strengths and limitations of the project serves to identify and assess the project's potential

benefits and barriers related to EBP (Grove, 2017). Practice improvements may result from the

translation of evidence made in research, and the application of the doctor of nursing practice

(DNP) essential competencies which DNP graduates must strive to achieve during their studies

to become professionals at the highest level in their field (Garritano, Glazer, & Willmarth-Stec,

2016). An EBP project to improve knowledge and health beliefs on dyslipidemia for adult and

elderly Hispanic primary care patients was implemented and evaluated, with the hopes of

improving patient and population health outcomes.

Procedures

Pre- and Post-Training Surveys

To assess the acquisition and improvement of knowledge and the change in health beliefs

of the participants, two surveys were employed. The surveys measured health knowledge and

health beliefs by asking the same questions before and after the educational intervention. Also, in

the pre-training survey, a series of demographic questions were asked of the participants, which

included age, gender, ethnicity, work status, marital status, number of daily medications taken,

and the highest level of education. For each participant, the surveys were linked using two

identifiers: the first two letters of the last school attended and the day of the birth month.

Furthermore, the data analysis included calculating descriptive demographic statistics

(means, median, mode, and percentages) from the pre-training survey. Each participant's disease

knowledge and health beliefs were assessed using the scoring method for the respective instrument before and after the intervention. The mean scores for the pre-tests and the post-tests were compared to establish the intervention's clinical and statistical significance.

Analysis of the data was performed using the IBM SPSS (version 25) and Windows Microsoft Office 2016 Excel. For the means comparison, a paired t-test was employed because this test is commonly used to analyze the difference between two means from the same participants before and after an intervention (Kellar & Kelvin, 2013). The level of statistical significance of the project was established as $p \leq 0.05$. In this project, an increase in the means for the overall health beliefs and knowledge would be statistically significant if the probability of such an increase was $\geq 95\%$. In this event, the intervention would be beneficial to improve health beliefs and knowledge for dyslipidemia.

Participant Demographics

The demographic characteristics of the participants in this EBP project represented a reflection of the inclusion criteria requirements for the project. The demographic data was collected as part of the pre-educational questionnaire. These demographic characteristics included the participant's age, gender, ethnicity or provenance, work status, marital status, number of daily medications taken, language preference, and the highest level of education. Furthermore, based on the participant's expression to the project's implementer of their language preference to participate in the project, this data was collected as well. Thirty potential participants were initially identified and expressed their interest of participating in the project. However, only 24 individuals completed all the steps to become full participants in the project. Each of these 24 participants completed the pre-educational questionnaires on dyslipidemia and

health beliefs, the educational intervention on dyslipidemia, and the post-educational questionnaires on dyslipidemia and health beliefs.

The participant's average age was 63.2 years, with a range from 51 to 80 years. The median age was 61.5 years. Twelve participants were between 50-59 years of age, whereas six were between 60-69 years of age; four were between 70-79 years of age, and two were between 80-89 years of age (see Figure 1).
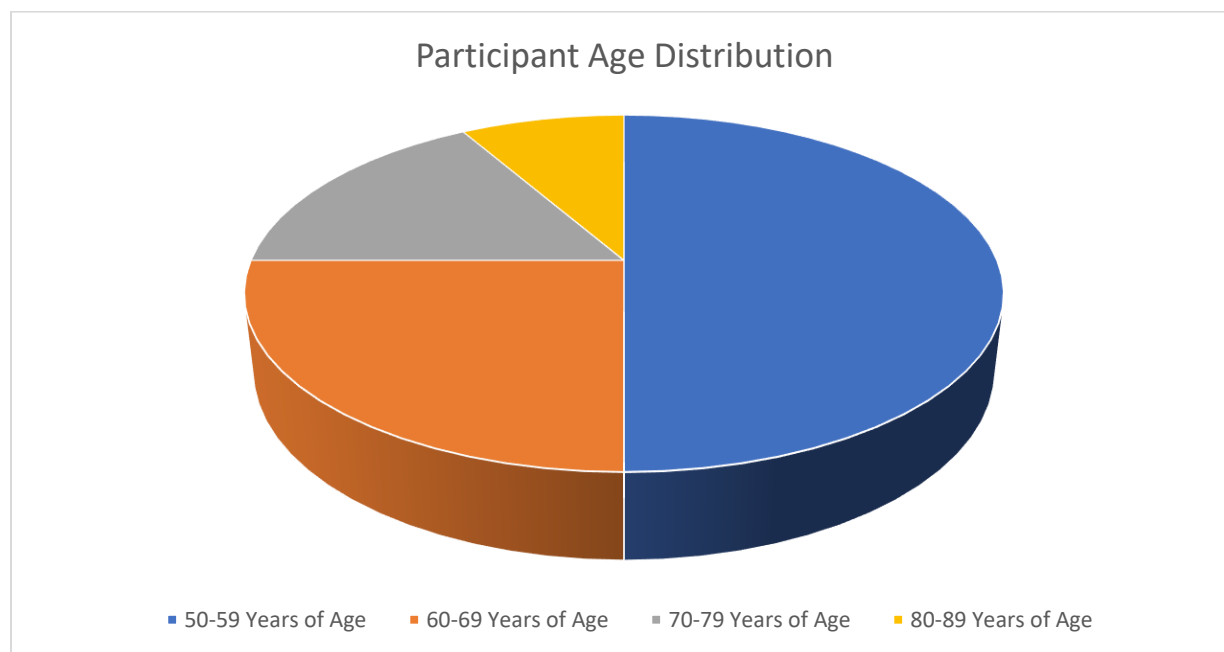
Figure 1. Participant's Age Distribution

The gender distribution was 62.5% (n =15) women and 37.5% (n = 9) men. All participants (n = 24) were of Hispanic origin. The participants' work status was reported as: 33.3% retired; 45.8% working full-time, and 20.8% part-time. The participants' marital status was reported as: 66.6% (n =16) currently married, whereas 29.2% (n =7) divorced, and 4.2% (n =1) widowed. The average number of medications taken daily by the participants was 4.75, ranging from zero (0) medications to 12 daily medications.

The highest level of education was reported: 16.6% (n = 4) high school diploma; 20.8%

(n = 5) completed some college education. Likewise, 20.8% (n = 5) an associate degree; 20.8%

(n = 5) a bachelor's degree, and 20.8% (n = 5) a graduate degree (see Table 1).

Table 1. *Participant Demographics*

Characteristic	n	%
Age		
50-59	12	50
60-69	6	25
70-79	4	17
80-89	2	8
Gender		
Male	9	37.5
Female	15	62.5
Marital Status		
Married	16	66.7
Divorced	7	29.2
Widowed	1	4.2
Highest education level completed		
High school	4	16.7
Some college	5	20.8
Associate degree	5	20.8
Bachelor's degree	5	20.8
Graduate degree	5	20.8
Employment status		
Retired	8	33.3
Full-time	11	45.8
Part-time	5	20.8
Language Preference		
Spanish	21	87.5
English	3	12.5

Note. Not all percentages add to 100% due to rounding. Overall, 83.2% of the participants
identified themselves as having some college or above.

Expected Outcomes

Knowledge

Knowledge, according to Merriam-Webster Dictionary (2019), is defined as "the fact or

condition of knowing something with familiarity gained through experience or association"

(para. 1). Acquisition of knowledge permits the discovery of new information and new

possibilities, which can have an effect in the way healthcare services are delivered (Andrade et al., 2017). A clear understanding of what this newly acquired information entailed was sought with the implementation of this EBP educational intervention. In this study, knowledge was measured as: (a) patients' comprehension of the negative effects of dyslipidemia's comorbid conditions and (b) understanding the threats to experiencing CVDs, when dyslipidemia is untreated or when recommended treatment was not followed. Furthermore, knowledge was acquired when patients were able to explain the newly learned information in their own words, thus assuring changes in comprehension and self-care behaviors that could have positively affected health outcomes. With proper health education, people can make informed health decision to improve their health outcomes (Miller, 2016).

In the context of this EBP educational intervention, knowledge was defined as the acquisition of new information on dyslipidemia. This knowledge included: becoming aware of the risk factors for dyslipidemia and the levels of lipids that are desirable for good health, and understanding the treatment modalities for dyslipidemia.

Health Beliefs

In the case of chronic disease management, approximately 50% of patients do not adhere to the advices made by their clinicians (Miller, 2016). Failure to adhere to treatment is affected by a variety of factors, including the patient's understanding of the disease process, the perceptions of the effect this disease will have on their lives, and their personal health beliefs surrounding benefits of and barriers to efficacious treatment (Miller, 2016).

People's health beliefs can influence what they think, what they say, and how they act regarding a particular health condition. These beliefs are influenced by their perceptions of how susceptible they are to a disease, how severe the disease would be, and how beneficial the

treatment (Daryani et al, 2016). Perceived barriers are often a target of various educational programs that focus on improving health beliefs, based on the HBM, and can result in profound effects in altering health behaviors (Daryani et al, 2016). How individuals perceive their healthcare has a direct effect on their actions, or poor decisions, and can be used to identify their abilities to adopt health-protective behaviors (McArthur et al., 2018). Finally, an individual's health beliefs also affect the beliefs of those around them, such as family members and relatives, and friends and associates because the healthcare system does not just involve one person, but a community of people (Caya et al., 2019).

The DNP project aimed to change the participants' knowledge of dyslipidemia, including knowledge of the negative effects associated with the condition as they relate to CVDs. The educational intervention on dyslipidemia helped to change the participant's health beliefs about the perceived benefit of treatment adherence which, in-turn improved health outcomes.

Evaluation of Outcomes

Evaluation of the outcomes for an EBP project involved a careful analysis of what the data means and their interpretation to reach an understanding of the evidence (Kellar & Kelvin, 2013). This evaluation provided valuable information on the events and process during the implementation of the study and serves to compare and to assess the outcomes (Kellar & Kelvin, 2013). The presentation of the data obtained was necessary to inform other healthcare professionals and the scientific community of the efforts taken to advance EBP through the study (Kellar & Kelvin, 2013). An a gap remains in the literature in the efforts made to educate the adult and elderly Hispanic patients in primary care regarding dyslipidemia, its effect in the overall health status, and the potential improvements that can be obtained in patient outcomes by implementing education.

Results

Group Comparative Means

The expected outcome of the educational intervention on dyslipidemia was to improve the participant's health beliefs and increase their understanding and awareness for dyslipidemia, in aims of stimulating a change in the participant's health-related behaviors associated with dyslipidemia and its negative effects on health. The mean scores from the pre and post surveys on DsK and health beliefs demonstrated a significant improvement and increase in health beliefs and knowledge respectively (see Table 2).

The mean pre-survey score was 3.67 for Health Beliefs ($SD = 0.635$) and 77.6 for Knowledge ($SD = 0.219$). The mean post survey score was 3.92 for Health Beliefs ($SD = 0.992$) and 93.1 for Knowledge ($SD = 0.101$). The p-values were 0.043 ($p \leq 0.05$) for Health Beliefs and 0.014 ($p \leq 0.05$) for Knowledge, as seen in Table 2.

Table 2. *Group Comparative Means*

Variable	Pre-Training Means	Post-Training Means	$t(14)$	P
Health Beliefs	3.67	3.92	2.224	.043*
Knowledge	77.6	93.1	2.798	.014*

Note. * significant at $p \leq 0.05$.

Health Beliefs

In all, 24 participants completed a pre- and post-intervention questionnaires, which asked a total of 15 questions to evaluate the participant's health beliefs in relation to the topic of dyslipidemia. These questions were presented before and after the educational intervention to assess this concept prior to and immediately following the educational presentation on dyslipidemia. The questionnaires asked the same questions before and after the educational sessions, and the responses of the participants in this regard, were recorded, evaluated and analyzed.

Health Beliefs Measurement Tool

The Health Belief's Dyslipidemia Education Pre- and Post-Training Survey evaluated the health beliefs of the participants using a series of questions that were adopted and adapted from previously used measurement tools to evaluate health beliefs. The answers to each question were measured using a five-point Likert type scale that included the choices: "5 = Strongly Agree; 4 = Agree; 3 = Not Sure; 2 = Disagree; 1 = Strongly Disagree." Individual questions in this questionnaire included "My dyslipidemia is well controlled", "If I changed my "habits" I would be easier to follow my diet (foods for persons with dyslipidemia)", and "I believe that my medication will control my dyslipidemia", among others. These questions were selected based on the theoretical framework established by the HBM (Nursing Theories, 2012).

Health Beliefs Pre- and Post-Intervention Survey Results

The pre-assessment and post-assessment means for each question regarding health beliefs were compared. The mean scores were based on the 5-point Likert scale (see Table 3).

Table 3. *Dyslipidemia Health Beliefs (N = 24)*

Question Number	Questions	Pre-Training Mean (*SD*)	Post-Training Mean (*SD*)	*t*-value	*p*
1	My dyslipidemia is well controlled.	3.96 (0.955)	4.00 (0.885)	0.371	.714
2	I would have to change too many habits to follow my diet (foods for persons with dyslipidemia).	3.21 (1.062)	2.71 (1.268)	3.140	.005*
3	It has been difficult following the diet (foods for persons with dyslipidemia) that the doctor ordered for me.	2.92 (1.1)	2.63 (1.345)	0.598	.016*
4	I am confused by all the medication the doctor has given me.	2.33 (1.129)	1.83 (.702)	3.391	.003*
5	I have others around me who remind me to eat the right foods.	3.67 (1.404)	4.00 (1.142)	2.145	0.043*
6	I can count on my family when I need help following my diet (foods for persons with dyslipidemia).	4.17 (.868)	4.38 (1.135)	1.551	.135
7	If I changed my "habits" it would be easier to follow my diet (foods for persons with dyslipidemia).	3.96 (.859)	4.38 (1.135)	3.122	.005*
8	My work makes me so tired that it's hard to follow my diet (foods for persons with dyslipidemia).	2.50 (1.18)	2.46 (1.179)	0.371	0.714
9	I believe that my diet (foods for persons with dyslipidemia) will help prevent diseases (complications) related to dyslipidemia.	4.46 (.884)	4.92 (.282)	3.114	.005*
10	Following a prescribed diet (foods for persons with dyslipidemia) is something a person must do no matter how hard it is.	3.96 (.999)	4.79 (.415)	5.816	.00*

Question Number	Questions	Pre-Training Mean (*SD*)	Post-Training Mean (*SD*)	*t*-value	*p*
11	I believe that my diet (foods for persons with dyslipidemia) will control my dyslipidemia.	4.25 (.676)	4.63 (.576)	3.715	.001*
12	I must follow my diet (foods for persons with dyslipidemia) even if I don't think I am getting better.	3.92 (.776)	4.58 (.584)	6.782	.00*
13	I believe that my medication will help prevent diseases (complications) related to dyslipidemia.	4.04 (.955)	4.33 (.482)	2.070	.05*
14	I believe that my medication will control my dyslipidemia.	3.88 (.68)	4.46 (.721)	4.897	00*.
15	I must take my dyslipidemia medication even if I don't think I am getting better.	3.79 (.977)	4.67 (.482)	6.307	.00*

Note. * $p \leq 0.05$ statistically significant.

A *t*-test for pre- and post-intervention means for each question demonstrated an overall elevation in the means after the intervention. These findings provided evidence of a clinically significant change in health beliefs for the participants. Of the 15 questions presented to the participants, only 3 questions (#1, #6, and #8) the difference in the means were not significant (see Table 3). Question #1 pertained to how the participants believed their dyslipidemia was well controlled. For this question, the change in the mean was minor. Also, question #6 referred to the participant's belief on how much they could rely on their family when following their dyslipidemia diet. For this question, the change in the mean went from 4.17 (pre-training) to 4.38 (post-training), with a calculated *p*-value of 0.135. Lastly, question #8 asked about the participant's view of how challenging their work activities were in preventing them from following their dyslipidemia diet. The mean change for this question was from 2.50 (pre-

training) to 2.46 (post-training), with a calculated *p*-value of 0.714 (see Table 3).

Of the remaining questions, #10, 12, 14, and 15 demonstrated the largest changes in the mean scores. These questions dealt with the participant's belief of the importance given to following their dyslipidemia diet and taking their dyslipidemia medication. The mean change for question #10 was 0.83, from 3.96 (pre-training) to 4.79 (post-training), and a *p*-value of 0.000. For question #12, mean change was 0.66, from 3.92 (pre-training) to 4.58 (post-training), and a *p*-value of 0.000. For question #14, the mean change was 0.58, from 3.88 (pre-training) to 4.46 (post-training), and a *p*-value of 0.000. Finally, for question #15, there was a mean change of 0.88, from 3.79 (pre-training) to 4.67 (post-training), and a *p*-value of 0.000 (see Table 3). The large differences in changes to the means, and their statistical significance indicate a clinically significant change in the belief that diet and medication are important in controlling their dyslipidemia.

Knowledge

Another practice change concept that was assessed was the participant's knowledge in relation to dyslipidemia. This was done by asking the 24 participants to complete a pre- and post-intervention questionnaire, which consisted of 15 questions that evaluated the participant's knowledge of dyslipidemia before and after the educational intervention. The participants' responses were recorded the difference in the means were analyzed to determine the significance of the educational implementation process.

Knowledge Measurement Tool

The Knowledge Dyslipidemia Education Pre- and Post-Training Survey evaluated the knowledge of the participants in relation to the topic of dyslipidemia, using a series of questions that were adopted and adapted from previously used measurement tools to evaluate knowledge.

The answers to each question were scored as either correct or incorrect; *yes* was correct for every question except question 12. This question asked participants if they thought that: "Medication is more important than diet and exercise to control my dyslipidemia." For this question, the correct answer is *No* because medication is secondary in controlling an individual's dyslipidemia, when compared to the benefits of diet (Pignone, 2019). The questions used in the pre- and post-intervention questionnaires were adopted and adapted from knowledge questions, previously utilized in a diabetes knowledge assessment tool, given to Hispanic participants to assess their knowledge before and after an educational intervention on diabetes (Garcia et al., 2001).

Knowledge Pre- and Post-Intervention Survey Results

The data analysis of the participants' knowledge regarding dyslipidemia and its related negative consequences indicated that they had acquired new knowledge after the presentation. The t-test was performed for each question to see which areas were significantly increased and which were not (see Table 4).

Table 4. *Dyslipidemia Knowledge*

Question Number	Dyslipidemia Knowledge Question	Pre-training Score	Post-Training Score	Pre-training Mean (*SD*)	Post-training Mean	*t*-value	*p*
1	*Eating too much high cholesterol food and other fatty foods is a cause of dyslipidemia.*	96%	100%	1.958 (.204)	2.000 (0.0)	1.000	0.328
2	*The usual cause of dyslipidemia is an excess of cholesterol in the body.*	83%	100%	1.833 (.381)	2.000 (0.0)	2.145	.043*
3	*Dyslipidemia is caused by failure of the liver to process cholesterol in the body.*	75%	83%	1.75 (0.442)	1.833 (.0.381)	1.446	.162
4	*The liver produces cholesterol.*	25%	100%	1.25 (0.442)	2.00 (0.0)	8.307	.00*
5	*In untreated dyslipidemia, the amount of cholesterol in the blood usually increases.*	88%	96%	1.875 (0.338)	1.958 (0.204)	1.446	.162
6	*If I have dyslipidemia, my children have a higher chance of having dyslipidemia.*	42%	88%	1.417 (0.504)	1.875 (0.338)	4.412	.00*
7	*Dyslipidemia can be cured.*	79%	88%	1.792 (0.415)	1.875 (0.338)	1.446	.162
8	*A fasting blood cholesterol level of 220 is too high.*	75%	96%	1.75 (0.44)	1.958 (0.204)	2.460	.022*
9	*The best way to check my dyslipidemia is by testing my blood.*	100%	100%	2.0 (0.0)	2.0 (0.0)	N/A	N/A

Question Number	Dyslipidemia Knowledge Question	Pre-training Score	Post-Training Score	Pre-training Mean (*SD*)	Post-training Mean	*t*-value	*p*
10	*Regular exercise will decrease the need for statins or other medications to control dyslipidemia.*	58%	67%	1.583 (0.504)	1.667 (0.482)	1.446	.162
11	*There are two main types of dyslipidemia: Familial (hereditary) and Non-familial (non-hereditary).*	67%	100%	1.667 (0.48)	2.0 (0.0)	3.391	.003*
12	*Medication is more important than diet and exercise to control my dyslipidemia.*	13%	21%	1.125 (0.34)	1.208 (0.42)	1.446	.162
13	*Dyslipidemia often causes poor circulation to the heart and increases the possibility of a heart attack.*	100%	100%	2.0 (0.0)	2.0 (0.0)	N/A	N/A
14	*The way I prepare my food is as important as the foods I eat to control my dyslipidemia.*	88%	100%	1.875 (0.38)	2.0 (0.0)	1.813	.083
15	*Dyslipidemia can damage my heart.*	100%	100%	2.0 (0.0)	2.0 (0.0)	N/A	N/A

Note. Individual knowledge questions, pre- and post-training percentage scores were based on calculations of correct answers. * are significant at $p \leq 0.05$. N/A = not applicable (the *t*-value cannot be computed because the standard error of the difference is zero).

The pre-training group means and post-training group means were compared using the t-test. Therefore, the results indicated a statistically significant change in knowledge following the educational presentation on dyslipidemia (See Table 2).

The results obtained from the pre- and post-intervention means from individual questions demonstrated a substantial improvement in the percentage of correct answers after the educational intervention. Of the 15 questions, seven of them were not statistically significant (questions #1, 3, 5, 7, 10, 12, and 14). Five of the questions (# 2, 4, 6, 8, and 11) indicated a significant increase in scores. Moreover, three questions did not demonstrate any change in their means (# 9, 13, and 15) because they were already aware of the correct answers (see Table 4). These three questions dealt with the participant's understanding of how dyslipidemia can be tested using laboratory analysis (question #9), the participant's awareness of how important and damaging dyslipidemia can be (question #13), and the participant's knowledge of dyslipidemia's potential to damage their heart (question #15).

The most significant changes to the percentages and the means were noted in questions # 2, 4, 6, 8, and 11. Of these, question #4, which dealt with inquiring on the participant's knowledge of the origins of cholesterol in the body, demonstrated the greatest increase in percentage change for the correct answer at 75% (from 25% to 100%), with a mean change of 0.75: from 1.25 (pre-training) to 2.00 (post-training), and a *p*-value of .00 (see Table 4). As noted, the other questions that showed a statistically significant value helped to demonstrate the knowledge obtained regarding the benefits and clinical significance of providing an educational intervention for participants on dyslipidemia to improve their knowledge.

Discussion

The DNP project that aimed to improve Hispanic adult and elderly primary care patients' knowledge and health beliefs resulted in enhancements of the awareness regarding the various factors associated with dyslipidemia, including causes, risks, and healthy behavior changes that can be undertaken to improve the health of individuals experiencing this condition. Given the challenges that were presented due to the current Coronavirus Disease of 2019 (COVID-19) pandemic, the implementation process was altered and adjusted to meet the needs of the participants and to comply with social distancing and public restrictions recommended by the Centers for Disease Control and Prevention (CDC, 2020a). The adoption of novel delivery methods for the educational sessions on the topic of dyslipidemia was central to the implementation process of this project.

Strengths

There were various parts of the implementation process that demonstrated robust results in educating the Hispanic adult and elderly primary care community on dyslipidemia. Participants responded to the invitation to participate in this project with enthusiasm and eagerness to learn about this health topic. Secondly, participants expressed that they experienced increased comfort with the delivery method of the educational sessions that were due to the COVID-19 pandemic social distancing restrictions (CDC, 2020a). These educational sessions were also compact and presented a summary of the information needed to improve the knowledge of the topic of dyslipidemia.

A major strength was noted by using a web-based platform to conduct and deliver the educational intervention to the patients. Most of the educational sessions were conducted using Zoom®, as an accessible, free, and user-friendly platform to conduct online meetings. Many

participants were already familiar with this platform for online meetings. However, at times, specific directions had to be given to some participants regarding the technology necessary to proceed and complete the educational sessions with Zoom®. In all, participants were able to follow the directions given to use this platform with relative ease. Finally, the presentation style and project's implementer fluency in Spanish represented a strength for the project's success because participants understood the verbal, and written instructions, directions, information, and advice given by the project's implementer.

Limitations

Numerous limiting factors were present during the implementation of this EBP educational intervention project. Primarily, the implementation was affected by the current COVID-19 pandemic social restrictions (CDC, 2020a). Several changes and amendments had to be made to the implementation of the project's intervention process that included the how the educational intervention was to be delivered.

All three components of the educational intervention (sessions 1, 2, and 3) were condensed into one session that lasted about 45 minutes. This was done to reduce the potential for exposure to COVID-19, without causing undue fatigue for the participant. Also, participants were given a choice of attending one of the following sessions: a one-to-one virtual session, a one to one in-person session, or a group session limited to four participants per session. These choices provided the participants with a choice of the educational intervention delivery type, while reducing the potential for exposure to COVID-19 (CDC, 2020a).

For the educational intervention sessions that were performed in-person, several protocols/guidelines were followed, per CDC recommendations regarding social distancing and hygiene regarding COVID-19 (CDC, 2020b). These guidelines were enforced for the project's

implementer, staff, and participants, and included washing hands with soap and water for at least

20 seconds or with hand sanitizer, before, during (if necessary), and after the educational

intervention session (CDC, 2020b). Also, wearing a face mask for the duration of the educational

intervention session, sitting at least six (6) feet apart from each other. The chairs and other

furniture used by participants were sanitized before and after each educational session. Proper

social distancing was maintained by having no more than four participants per session and by

delivering the educational intervention in a 20 x 30-foot room (CDC, 2020b).

Alternative technologies were also utilized to deliver the educational intervention for this

EBP projects to adhere to social distancing practices and reduce the spread of the virus (Hilburg,

Patel, Ambruso, Biewald, & Farouk, 2020; Thu, Ngoc, Hai, & Tuan, 2020;). Therefore, for those

individuals who decided to participate in an online educational intervention, a personal invitation

link was sent using a secure and password protected participant's session. The educational

intervention was carried out using Zoom® as the main online meeting platform during the

project. As previously noted, this educational delivery format represented a strength, and a

limitation to the project. The decision to use this platform was determined by the participants'

familiarity with this format to meet virtually and that the platform is easy to use. The majority of

the participants opted for participating in the educational sessions using this format, which

increased the duration of the session that was conducted for each participant. The use of this

platform, however, resulted in some unexpected challenges for about one-quarter of the

participants because the increased age and lack of individual technological abilities became

evident during this process.

As a whole, one entire session delivered in this online format included the following

steps: (a) explaining EBP project and purpose to participant via phone conversation, including a

question and answer (Q&A) session to clarify the information provided, (b) explaining the informed consent form, including a Q&A session to clarify informed consent information, (c) hand delivering the educational intervention package forms to participant's residence, and receiving a signed informed consent form, (d) a subsequent telephone call to explain the process and procedure to complete pre-educational intervention survey, (e) scheduling of the Zoom® meeting and sending the meeting's invitation link and password to the participant, (f) delivering the educational presentation/intervention session on dyslipidemia via Zoom®, including a Q&A session following the educational session, (g) explaining the process and procedure to complete post-educational intervention questionnaire, (i) picking up the completed questionnaire forms at participant's residence by the project's implementer, including a final Q&A session to answer any study-related concerns from the participants.

Implications for Nursing Practice

Translating research into practice is one of the primary competencies and core elements in advanced practice nursing (Kim, S. C., Covington, Benavente, & Willson, 2019). Gaining proficiency in EBP potentially creates advanced practitioners who become not only consumers of EBP, but also generators of EBP. The development and implementation of a project is followed by the collection and analysis of the data and the dissemination of the project's findings (Hande, Williams, Robbins, Kennedy, & Christenbery, 2017; Kim, S. C. et al., 2019). The implications for nursing practice and nursing education include the development of leaders and champions of scientific inquiry and the overall involvement of advanced practitioners in providing and creating an EBP-based culture to improve patient outcomes (Kim, S. C. et al., 2019). The implications for nursing practice can be best understood by analyzing the doctor of nursing practice (DNP) essentials established by the American Association of Colleges of Nursing (AACN, 2006). These

eight DNP Essentials establish a framework of competencies for the implications to nursing practice for this EBP project (AACN, 2006).

Scientific Underpinnings for Practice

According to the DNP Essentials, the scientific underpinnings for practice explains how DNP graduates must be able to translate evidence from research into practical applications that can be used to improve patient outcomes (AACN, 2006). Furthermore, this essential underscores the importance of preparing graduates to meet the challenges of current and future issues in practice by using solid knowledge base that focuses on scientific areas of practice that includes both the natural and social sciences (AACN, 2006).

In the context of this EBP project on DsK and health beliefs for dyslipidemia among adult and elderly Hispanic primary care patients, the utilization of the Health Belief Model (HBM) served as a framework to attempt to alter the participant's health beliefs and subsequent health-related behavior (Current Nursing, 2012; Hochbaum, 1958). Disease education was imparted to the participants in this project to improve knowledge and to adjust the health belief related to dyslipidemia, and its associated negative effects on health and patient outcomes. Moreover, the project's outcomes provided valuable information for successive applications of this model to other patient populations and other disease conditions, as appropriate.

Organizational and Systems Leadership

Leadership is one of the essential skills in which that DNP graduates must gain competence and develop throughout their education. The acquisition of leadership skills and knowledge serves not only to improve quality of care and health outcomes, but also to reduce the inequities associated with the healthcare environment and the populations served (AACN, 2006). The development and evaluation of care delivery approaches that are adjusted to a particular

patient population to meet its needs, must be achieved by attaining an understanding of the healthcare system (Garritano et al., 2016). Further appreciation by the DNP graduate for the cost-effective initiatives in clinical practice has the potential to reduce the risk for patients and improve quality of life (Garritano et al., 2016).

In the context of this project, assuming a leadership role was not only demonstrated during the implementation of the project, but also after the completion of the intervention. The COVID-19 pandemic presented challenges that required project's implementer's leadership skills, strong directives, and decisions to secure the success of the project. Providing alternatives for the intervention sessions by using technology reduced the risk of exposure to the virus, enhanced patient's safety, and improved the communication between patient and provider. In addition, patients reported feeling at ease with this format. Furthermore, the completion of the project provided the opportunity to bring the different stakeholders, and other interested parties, to share the results of the project and obtain feedback from these individuals.

Clinical Scholarship and Analytic Methods

Scholarly activities involve an understanding and an ability to translate research into practice, and is an expectation for DNP graduates (AACN, 2006). Furthermore, interprofessional collaboration enhances the knowledge acquisition process and improves patient outcomes and care practices (AACN, 2006). Collaborative partnerships also promote a team-building environment and diversity of ideas, which has the potential to increase the patient-centered care focus, advance nursing knowledge, and improve patient outcomes (Christiansen & Champion, 2018).

The outcomes from this EBR demonstrated significant benefits regarding changes in health beliefs that could potentially translate into a change in health-related behavior associated

to dyslipidemia. Results can be utilized to develop other interventions that can be used to modify the health-related behavior and beliefs of individuals with other chronic conditions. Moreover, the collaborative efforts made throughout the development, implementation, and analysis of the DNP project resulted in advancements to nursing knowledge that has the potential to be carried over into practices changes for the population served.

Information Systems/Patient Care Technology

Leadership, development, and knowledge in relation to the utilization of patient care technology and other information systems are expectations of DNP graduates, to achieve improvements in patient care (AACN, 2006). The delivery of health information through technologies and novel platforms can significantly enhance the audience reached and the quality and effectiveness of the information shared. New formats and procedures made in the delivery of health information can make DNPs agents of change and innovative healthcare delivery practices, to improve the quality and efficiency of care provided in complex health environments (Christiansen & Champion, 2018).

In the era of emerging technology and new communication methods, accelerated and brought to the forefront by the COVID-19 pandemic, health information was delivered efficiently and without sacrificing quality. Moreover, a considerable reduction of healthcare-related cost can be seen by using these technologies. An educational intervention on dyslipidemia proved to be successfully executed, in part due to the familiarity of the technology platform. This further demonstrated the benefits of using web-based learning tools to improve patient's awareness and knowledge of a particular health topic.

Healthcare Policy for Advocacy in Healthcare

The development and implementation of effective policies in healthcare is essential to

creating a system that seeks to meet the needs of the population is serves (AACN, 2006). DNP graduates are called to play a central role in the policy development efforts, providing education and advocacy in matters that concern the current healthcare environment (AACN, 2006). Other advocacy activities with which DNP graduates must become competent include the application of ethical principles in healthcare, reduction of health inequity, and justice (Garritano et al., 2016). Furthermore, extensive knowledge of policy and leadership foundations can be used by DNP graduates to serve as counsels in policy development efforts, providing evidence-based knowledge and experience through practical applications of research, to better inform political leaders and other stakeholders in the development and implementation of policy (McCauley et al., 2020).

Evident gaps and weaknesses have been identified in the literature that demand special attention health-related research on dyslipidemia related to the Hispanic population (Harris et al., 2017; Rodriguez et al., 2014; Romero et al., 2016; Schrauben et al., 2020; Soto Mas et al., 2018). Also, the growing issue of health care inequities, which is often targeted toward the most vulnerable populations in the US, generates the need to address this problem with swift and effective policies (Sonenberg & Knepper, 2017).

Changes to the existing policies regarding health disparity can be achieved by implementing an educational intervention that addresses the needs and challenges experienced by the Hispanic population in the US (Schrauben et al., 2020; Soto Mas et al., 2018). This DNP project aimed to address this population and problem and provided valuable and updated material to inform policymakers and other stakeholders to be used in the future development and implementation of specific policies designed to improve outcomes in the community.

Interprofessional Collaboration

Working collaboratively in a team for the achievement of a common goal is central to the DNP graduate's competency development process (AACN, 2006). The complexities of the healthcare environment demand that health professionals form a variety of specialties and backgrounds collaborate to meet the challenges and improve the health outcomes of the public they serve (Walker & Polancich, 2015). Interprofessional collaboration requires the use of leadership and effective communication skills to develop and implement models and guidelines for clinical practice emerging from scholarly works (AACN, 2006; Christiansen & Champion, 2018).

This DNP project employed extensive interprofessional collaboration that included the primary care setting's medical and nursing staff, primary care physician, administrative personnel, and service coordinators from the facilities where the participants resided. The project's implementer exercised leadership skills to meet the challenges that were encountered as the implementation of the project progressed. Furthermore, a combination of virtual meetings and telecommunication efforts complemented the interprofessional collaboration throughout the implementation and evaluation phase of the project.

Clinical Prevention and Population Health

DNP graduates are called to demonstrate competency in promoting health and the preventing disease and are integral parts of their clinical prevention (AACN, 2006). EBP knowledge and recommendations can be utilized to promote public health practices aimed at improving the population's health (AACN, 2006). Population health disparities exist in the US, and DNP graduates carry the responsibility of contributing to reduce the health inequities that form part of the American healthcare system (Sonenberg & Knepper, 2017). The need exists to

ensure that health promotion and disease prevention practices, including education efforts reach the public to enhance the quality and access to healthcare services of the public served (Sonenberg & Knepper, 2017).

Acquisition of knowledge can serve in achieving population health. Imparting health education has the potential to improve health-related information, which can then alter the beliefs and health-related behaviors of individuals (Schrauben et al., 2020). Enhancing the disease knowledge on dyslipidemia in a vulnerable population, such as the Hispanic population, has the capacity to increase health literacy skills. These skills improve the disease prevention activities such as risk identification and risk reduction in this population (Schrauben et al., 2020).

Advanced Nursing Practice

Practicing at the highest level of the profession is another expected competency that DNP graduates must achieve (AACN, 2006). This involves, in part, advancing the knowledge and the skills necessary to promote clinical practice, including leadership, mentoring and supporting other nurses to improve their practice, and acquiring analytical and conceptual skills to evaluate complex health issues (AACN, 2006; Paplham & Austin-Ketch, 2015; Walker & Polancich, 2015).

Evidence from clinical practice and from the literature search had demonstrated the need for nursing-led education to the middle aged and elderly patients in the practice. Their deficient disease knowledge on dyslipidemia reduced their opportunity at improving their health beliefs, which would potentially enhance their health-related behavior and improve health outcomes. Therefore, the educational intervention proved successful in changing their beliefs, increasing their knowledge and led to behavioral changes.

Conclusions

The purpose of the evidence-based DNP project was to improve the knowledge and health beliefs of Hispanic and elderly adult primary care patients with dyslipidemia. The literature suggested that this vulnerable population lacked the necessary health-related information regarding dyslipidemia to make informed decisions that could affect their overall health and outcomes. Furthermore, Hispanic adults and elderly individuals are negatively affected by a limitation of knowledge and health literacy skills, which consequently influences their health-related beliefs and behaviors. As a matter of common clinical practice, healthcare practitioners often clearly and concisely informed their patients regarding the various recommendations that could positively alter their health beliefs and knowledge. However, in the author's experience, which was confirmed by previous research, such practice was not adequate in increasing DsK or in changing health beliefs.

In addition, findings from this project confirmed that, in some areas, the study participants lacked knowledge and had negative health beliefs regarding dyslipidemia. However, in a changing and complex healthcare system, a DNP project that focused on addressing the needs of the Hispanic community, could close the gap that exists in the literature and patient care. It helped to meet the challenges that are faced by this community regarding poor knowledge and health beliefs. Achieving this, in turn, may reduce the health disparity for minority populations across the US, thus improving access to care, and the quality of the health care that is provided.

The significant improvements noted in the comparative mean scores for Health Beliefs and Knowledge indicate that educational interventions that address chronic health issues in this community are very important. The need for additional education on other health issues of

importance to this community is therefore strongly recommended to achieve improvements in overall wellbeing and health outcomes.

  Further studies may improve on the delivery methodology for health education, taking into consideration the intricacies of the current healthcare environment, which limit the social contacts and face-to-face educational delivery methods. Such limitations required the virtual education practiced by this DNP project. Thus, improvements in disease knowledge and health beliefs can positively impact the patients' health behaviors, can potentially decrease associated health costs (hospitalizations and office visits), and can improve the quality of life and the patient's disease state and health outcomes.

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Appendix A

IRB Permission Documents

Appendix B

Table 5. *Literature Search Matrix*

Author(s)/ Year	Level of Evidence	Problem/Population and Purpose	Intervention	Comparison (if any)	Outcomes	Use of Evidence
Al-Noumani, H., Wu, J.-R., Barksdale, D., Sherwood, G., AlKhasawneh, E. & Knafl, G. (2019).	I (Systematic Review)	Hypertension (HTN) is a chronic health condition of global concern. The population affected is the adults aged 42-75 years old, from different cultural backgrounds and ethnicities. The purpose was to study the relationship between health beliefs and medication adherence in HTN	A systematic review of 30 quantitative studies using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, with studies dating from 1980 to 2018, in English only, retrieved from PubMed, CINHAL, EMBASE, and PsychINFO databases	None	Fewer perceived barriers to medication side-effects and higher self-efficacy were significantly related to higher medication adherence.	To gain awareness of, and assess the beliefs about HTN and medication administration in a culturally diverse healthcare environment to foster medication adherence, to decrease the challenges that exist regarding medication administration

Author(s)/ Year	Level of Evidence	Problem/Population and Purpose	Intervention	Comparison (if any)	Outcomes	Use of Evidence
Andrade, I., Silva C., & Correia Martins, A. (2017).	V (Systematic Review of Descriptive Studies)	The health literacy INDEX can be used to develop an improved type of health information material (HIM) fall prevention manual for older adults. The population involved included 16 adults over the age of 65 years old, identified as having a literacy level less than 4th grade, and limited functional health literacy. The purpose of the study is to develop an improved fall prevention manual for LHL older adults using the INDEX	The INDEX tool was used as a pretest tool. Also, a search was performed of the European Network for Safety among Elderly (EUNESE), the Directorate General for Health (Portugal), and the CDC web portals/websites for HIM fall prevention manual samples	A total of 11 fall prevention manuals were compared after generating an inclusion-criteria using the INDEX tool	Development of an improved health literacy, and age-friendly, fall prevention manual	Improved fall prevention manual can be included in a multifactorial fall prevention program for older adults in a variety of settings

Author(s)/ Year	Level of Evidence	Problem/Population and Purpose	Intervention	Comparison (if any)	Outcomes	Use of Evidence
Batterham, R. W., Hawkins, M., Collins, P. A., Buchbinder, R., & Osborne, R. H. (2016).	V (Systematic Review of Descriptive Studies)	Health services and health inequalities are affected by poor health literacy in a variety of healthcare settings and the community. The purpose of this study was to conduct an examination of the potential approaches to health literacy measurement and interventions in the community and healthcare settings	An assessment of health literacy measurement and analysis at different levels using various tools, such as the Universal Precautions toolkit, and the OPtimising Health Literacy and Access (Ophelia) process	Comparison of health literacy measurement strategies and tools	Measurement of health literacy is beneficial in understanding and identifying the capacities of individuals and communities to effectively make decisions regarding their healthcare	Clinicians, policy makers, and healthcare consumers can utilize the learned information to develop interventions aimed at increasing the health literacy of the population they serve

Author(s)/ Year	Level of Evidence	Problem/Population and Purpose	Intervention	Comparison (if any)	Outcomes	Use of Evidence
Brunk, D. R., Taylor, A. G., Williams, I. C., Cox, D. J., & Clark, M. L. (2017).	VI (Descriptive Qualitative Study)	Nine Hispanic adults (ages ranging from 30-66 years) with Type 2 Diabetes (T2D). The purpose is to assess possibility of using an educational intervention that is centered on the patient for self-management of T2D for the Hispanic population identified as having low health literacy skills	A program combining education and lifestyle modification skill's improvement, including blood glucose self-monitoring, education on low glycemic load foods, and instruction on the importance of decreasing behaviors that led to a sedentary lifestyle,	None	Benefits can be found in adapting a health and lifestyle modification program to improve self-management of T2D in the Spanish-speaking population identified with low health literacy	Improvements in the development of the approach to, and the tools for better T2D management in Hispanic adults with LHL

Author(s)/ Year	Level of Evidence	Problem/Population and Purpose	Intervention	Comparison (if any)	Outcomes	Use of Evidence
Carollo, S. (2015).	V (Meta-Synthesis)	Low health literacy (LHL) is a problematic issue to society and to vulnerable groups of the population, such as older women. The purpose of this study was to identify challenges to older women with LHL regarding the patient-clinician relationship and communication skills to improve health literacy	Guided interviews were conducted on 12 study participants, including 4 health care providers and 8 older female patients chosen per inclusion criteria	None	There were five primary areas identified as having an important effect in the health care of LHL older women	Health care providers can use this evidence to improve the patient-clinician relationship, including communication and patient empowerment

Author(s)/ Year	Level of Evidence	Problem/Population and Purpose	Intervention	Comparison (if any)	Outcomes	Use of Evidence
Caya, T., Knobloch, M. J., Musuuza, J., Wilhelmson, E., & Safdar, N. (2019).	II (Prospective and Retrospective Study)	The consistent use of chlorhexidine gluconate (CHG) bathing is closely related to a reduction of healthcare associated infections (HAIs) and colonization in the healthcare setting. A total of 31 adult patients, in a major academic medical center, were interviewed to assess compliance with the use if CHG, using the Health Belief Model (HBM) to guide the interviews. The purpose of the study was to assess the patient's perception of CHG bathing and assessing the barriers to the implementation of a successful use via the HBM	Semi-structured interviews were conducted of adult patients using an interview guide based on the HBM concepts	None	Low perceived susceptibility to infection, and a low level of knowledge regarding the benefits of CHG use were reported as reasons for declining CHG baths	Patient education regarding the benefits of CHG use to prevent HAIs appears to be a critical factor in changing the perceived low susceptibility and perceived benefit of this infection prevention practice

| Chesser, A. K., Woods, N. K., Smothers, K., & Rogers, N. (2016). | I (Systematic Review) | To review and assess the current and published literature regarding the health literacy of older adults | Peer-reviewed literature searches, in English, conducted in the United States, in Medline from January 01, 2010 through December 31, 2014 that included the concepts of "health literacy, elderly, geriatrics, older adults, and low health literacy" (p. 2) Also, other well-known electronic databases including: Cumulative Index to Nursing and Allied Health Literature (CINAHL), Cochrane Library, Psych Info, and the Educational Resources Information Center (ERIC) | None | Improvements in health literacy skills in older adults are important in enhancing the health care strategies and support the necessity to create a standardized low health literacy screening tool for this population | Improving health literacy screening in older adults can be beneficial in the care of this population, including a reduction of the healthcare cost, in association with an improvement in the relationship and approval of both the patient and the provider |

Author(s)/ Year	Level of Evidence	Problem/Population and Purpose	Intervention	Comparison (if any)	Outcomes	Use of Evidence
De Alba, A., Britigan, D. H., Lyden, E., & Johansson, P. (2016).	III (Cross-sectional Study)	Patients from the study originating clinics who were between 19-75 years, identified themselves as Hispanic or Latino of origin, and were Spanish speakers with notable signs of cognitive impairment/To assess the health literacy levels of Hispanic adults, who are Spanish speaking individuals, accessing health care services in the Midwest	Electronic survey incorporating previously validated instruments for Spanish speakers: "The Behavioral Risk Factor Surveillance System (BRFSS), instruments used in research studies conducted by Britigan and colleagues in Hispanic communities of the Midwest, and the Short Assessment of Health Literacy-S&E (SAHL-S&E)" (p. 1727)	A total of 402 individuals participated (200 from the rural setting and 202 from the urban setting). Rural: 57% (n = 114) females and 43% (n = 86) males. Urban: 80% (n = 162) females and 20% (n = 40) males. Mexican origin was the most predominant nationality. Education: 40.5% rural and 44% urban indicating their highest level of education was elementary school	Low levels of health literacy were found in the population sampled, with low levels of health literacy significantly found on individuals based on gender, education levels, and country of origin	Further support recommended for additional studies on the health literacy issue with the support of government and private funding to evaluate the factors associated with low levels of health literacy including gender, age, and country of originto develop better interventions for improving HL

Author(s)/ Year	Level of Evidence	Problem/Population and Purpose	Intervention	Comparison (if any)	Outcomes	Use of Evidence
Geboers, B., Brainard, J. S., Loke, Y. K., Jansen, C. J. M., Salter, C., Reijneveld, S. A., & de Winter, A. F. (2015).	I (Systematic meta-review)	Older adults with low health literacy and the association with poor adherence/To evaluate the association of health literacy and adherence in older adults and assess the effectiveness of adherence improving interventions in this population	Systematic searches in eight electronic databases, including: Medline, Cumulative Index to Nursing and Allied Health Literature (CINAHL), EMBASE, DARE, Cochrane Library, Psych Info, the Educational Resources Information Center (ERIC), and Web of Knowledge. All databases were searched through September 2014 that included keywords such as: health literacy, adherence, compliance, and self-management	None	Lack of consistency noted in the association of health literacy and adherence in the older adults in all reviews	Public health practitioners could benefit from identifying strategies that lessen the negative effects of LHL on the health outcomes of older adultsto make improvements in the adherence to treatment element of healthcare

Author(s)/ Year	Level of Evidence	Problem/Population and Purpose	Intervention	Comparison (if any)	Outcomes	Use of Evidence
Harris, L. M., Dreyer, B. P., Mendelsohn, A. L., Bailey, S. C., Sanders, L. M., Wolf, M. S., … Yin, H. S. (2017).	II (Cross-sectional analysis from randomized controlled experiment)	Hispanic parents with low health literacy and limited English proficiency (LEP)/To examine the associations that exist between low health literacy, LEP, and liquid medication dosing errors in Hispanic parents	In 3 university-affiliated pediatric outpatient clinics, serving mostly low-income populations, parents were randomly assigned to 1 of 5 groups, each group differing in the unit of measurement shown on the medication bottle and asked to measure a total of nine times	Differences in parent characteristics in health literacy levels and English proficiency were assessed by using chi-square tests for categorical variables and Kruskal-Wallis tests for continuous measures. Spearman correlations were also used to assess the relationship between LEP and country of birth	There is commonality in medication dosing errors made by Hispanic parents, being more common among those who have low health literacy and LEP, demonstrating the disparities that exist in health quality and services in this population	Vulnerable populations, such as Hispanics and those with LEP can benefit from a redesign of medication labels and dosing tools to reduce disparities associated with literacy and language

Author(s)/ Year	Level of Evidence	Problem/Population and Purpose	Intervention	Comparison (if any)	Outcomes	Use of Evidence
Kim, H., & Xie, B. (2017).	I (Systematic Review)	Electronic Health (eHealth) is a widely used tool to disseminate health services and information using the Internet and other current technologies. People with low health literature (LHL) can encounter challenges when dealing with eHealth. The purpose of this study was to identify studies on the online services issue affecting the LHL population in aims to improve accessibility to eHealth	A systematic review of 25 databases using 13 topic subjects was conducted, yielding 74 publications used for the study along a criterion that included the development and evaluation of eHealth services and health literacy measurement tools among others	None	Barriers were identified to the access and use of eHealth services by people with LHL. Improved screening of LHL skills can serve to improve eHealth usage	Educational programs can be implemented for identified LHL individuals that can aid in the accessibility of this population to eHealth services

Koops van 't Jagt, R., Hoeks, J. C. J., Jansen, C. J. M., de Winter, A. F., & Reijneveld, S. A. (2016).	I (Systematic review)	Older adults negatively affected by limited health literacy skills/To assess the evidence for the effectiveness of interventions targeting to improve the comprehension of health-related documentation in older adults with various health literacy skill levels	Systematic search of original research studies, systematic reviews, and non-systematic reviews that included persons older than 50 years of age, using a variety of search engines, including: Medline, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Web of Science (WoS), the Cochrane Library, Psych Info, and the Educational Resources Information Center (ERIC). All searches were on publications dating from January 1, 2005 to March 7, 2014, using terms related to health literacy	None	Moderate evidence found in using narrative format and multiple-feature revisions in health-related documents to improve the comprehension of health-related documents in older adults	The use of the narrative format in health-related documents can be used to reduce the challenges faced by older adults with limited health literacy skills

Author(s)/ Year	Level of Evidence	Problem/Population and Purpose	Intervention	Comparison (if any)	Outcomes	Use of Evidence
Ma, C. (2018).	IV (Cross-sectional)	Self-care behaviors influence the decisions made to address hypertension (HTN) in young and middle-aged adults. The purpose of this study was to explore the influence of the five concepts (variables) inherent to the Health Belief Model (HBM) to influence the self-care behaviors regarding a chronic condition, such as hypertension, in young and middle-aged adults	A questionnaire survey was used on 382 participants between the ages of 18 and 59 years, all diagnosed with HTN, who had no cognitive of mental incapacities	Comparison made between the responses to the questionnaire regarding the HBM variables	Self-care behaviors are influenced by health-care beliefs variables, including the perceived susceptibility, perceived severity, perceived benefit, and perceived barriers, in young and middle-aged adults with HTN	Evidence suggests the benefits from the development and implementation of education programs designed to improve health beliefs in the population to address self-care behaviors and management of chronic diseases

Author(s)/ Year	Level of Evidence	Problem/Population and Purpose	Intervention	Comparison (if any)	Outcomes	Use of Evidence
MacLeod, S., Musich, S., Gulyas, S., Cheng, Y., Tkatch, R., Cempellin, D.,…Yeh, C. S. (2017).	III (Cross-sectional)	Inadequate health literacy (IHL) is a factor that influences the choices individuals make in the healthcare environment and the quality-of-care received. Older individuals (over 65 years of age) are increasing and are at increased risk of experiencing IHL. The purpose of this study was to estimate the prevalence of IHL among older adults eligible for care coordination	A random selection of 7,334 participants, who were AARP® members (65+ years old) was made to receive a modified version of the Consumer Assessment of Healthcare Providers and Systems (CAHPS), and the use of a single-item screener to identify levels of HL in older adults	Comparisons were made among respondents and non-respondents of the survey for propensity weighting	IHL was associated with several characteristic, including male gender, older, low education levels, and greater number of existing comorbidities.	Educational and care coordination activities may be developed to assist in reducing the IHL that older adults experience, thus improving the health outcomes of this growing population

Author(s)/ Year	Level of Evidence	Problem/Population and Purpose	Intervention	Comparison (if any)	Outcomes	Use of Evidence
Mock, M. S., & Sethares, K. A. (2019).	IV (Cross-sectional)	Low health literacy is linked to poor heart failure (HF) related self-care and hospital readmissions/To assess the validity and acceptability of the Single Item Literacy Screener (SILS), Test of Functional Health Literacy (S-TOFHLA), and the Newest Vital Sign (NVS) in hospitalized adults	Hospitalized patients, ages 18 and over, English speaking and previously diagnosed with HF from three non-teaching, community hospitals in the northeast were screened for sensory impairment, and then administered the Single Item Literacy Screener (SILS), Test of Functional Health Literacy (S-TOFHLA), and the Newest Vital Sign (NVS)	Comparisons made among participants using each of the tools regarding race, demographics, readmission rates, and concomitant depression	There is good reliability and acceptability of both the S-TOFHLA and NVS. The SILS significantly correlated with the S-TOFHLA, and can be used as a universal screening measure for adult patients with HF	The use of reliable and valid health literacy measurement tools can be used as a guide to the interventions employed by healthcare providers on the patients they serve, and improve awareness of health literacy skill levels

Author(s)/ Year	Level of Evidence	Problem/Population and Purpose	Intervention	Comparison (if any)	Outcomes	Use of Evidence
Oliveira, D., Bosco, A., & di Lorito, C. (2019).	I (Systematic review)	Older adults with low health literacy may have increased risk for the development of dementia/To assess the relationship that exists between health literacy levels and cognitive impairment in the elderly	Systematic literature review using Medline, PsycINFO, Embase, PubMed and Scopus, using a search strategy that included the words: health literacy, or health education, or health knowledge, attitudes, practice, or mental health	None	Low levels of health literacy may lead to increased risk of dementia later in life. Researchers found significant association between total literacy scores and the appearance of post-mortem plaques and tangles suggestive of Alzheimer's disease	Development and use of standardized HL measurement tools should be made to plan and implement dementia-risk reduction programs to favor lasting positive effects of the programs

Author(s)/ Year	Level of Evidence	Problem/Population and Purpose	Intervention	Comparison (if any)	Outcomes	Use of Evidence
Quartuccio, M., Simonsick, E. M., Langan, S., Harris, T., Sudore, R. L., Thorpe, R., … Kalyani, R. R. (2018).	II (Cross-sectional analysis)	Lower health literacy levels are associated with higher rates of mortality and chronic disease morbidity/To assess how low health literacy levels are associated with likelihood of diabetes in a large, multi-ethnic older population	Use of the Rapid Estimate of Adult Literacy in Medicine (REALM) on the Health, Aging and Body Composition (Health ABC) study participants, with data from the 3-year study visit to assess health literacy, was examined (n=2510). Also, measurements of Hemoglobin A1C, and fasting plasma glucose (FPG) were taken during year 4 visit	REALM results, Hemoglobin A1C, and FPG measurements compared, along with baseline characteristics of the groups, stratified by sex and diabetes status	Women with lower health literacy were found more likely have diabetes, independent of health-related and demographic variables, such as education levels	The importance of the relationship that is present between low health literacy and diabetes is underscored by the need to develop interventions that address the improvement of health literacy to effectively reduce the burden of other chronic disease conditions

Author(s)/ Year	Level of Evidence	Problem/Population and Purpose	Intervention	Comparison (if any)	Outcomes	Use of Evidence
Smith, S. G., O'Conor, R., Curtis, L. M., Waite, K., Deary, I. J., Paasche-Orlow, M., Wolf, M. S. (2015).	IV (Longitudinal cohort study)	Limited health literacy (LHL) is associated with reduced physical function, particularly among older adults. The purpose of this study is to determine the risk LHL poses on the physical function diminishing of older adults	The Health Literacy and Cognitive Function among Older Adults cohort (LitCog) were recruited using 529 adults in the community, ages ranging from 55-74 years old, from an academic internal medicine clinic and federally qualified health centers and measured for health literacy, physical function, and cognitive function using a variety of available tools	Comparisons were made among participants as far as their measured health literacy, physical function, and cognitive function, and predictors were investigated using the available data	Participants with low and marginal health literacy levels had a decline in physical function, in comparison to those individuals with adequate health literacy levels	Working to promote increased physical function in the older adult population can be improved by the implementation of strategies, tailored to the older population of Americans, that aim to increase health literacy levels in this population

Author(s)/ Year	Level of Evidence	Problem/Population and Purpose	Intervention	Comparison (if any)	Outcomes	Use of Evidence
Soto Mas, F., Schmitt, C. L., Jacobson, H. E., & Myers, O. B. (2018).	II (Randomized controlled study pre-test)	Effective interventions are needed to address both cardiovascular disease (CVD) and health literacy in Spanish speaking adults/To assess the effect of a health literacy curriculum on cardiovascular health behaviors in Spanish speaking adults	Participants in the intervention group received the Health Literacy assessment tool: Test of Functional Health Literacy (S-TOFHLA) and the English as a Second Language (ESL), with cardiovascular disease specific content: Cardiovascular Health Questionnaire (CSC)	Intervention and control group compared results using SAS 9.4 for data analysis, including descriptive and inferential statistics	Statistically significant results indicating positive effects of treatment for patients receiving the CSC pre-test scores, compared to the post-test scores	The development of effective interventions to address CVD and health literacy can be made using a multilevel education and health approach that targets the particular needs of the immigrant community of Spanish speakers

Author(s)/ Year	Level of Evidence	Problem/Population and Purpose	Intervention	Comparison (if any)	Outcomes	Use of Evidence
Weishaar, H., Hurrelmann, K., Okan, O., Horn, A., & Schaeffer, D. (2019).	V (Meta-synthesis)	Deficits in health literacy have a negative effect on health outcomes for the individual and on a global scale. The purpose of this study was to analyze the way health literacy issues are framed globally in the political area of life, and the factors that influence such framing	A search and review of health literacy related documents was done, on a global scale, using five well-known online databases, including policy documents, and websites that identified as key in the debate involving health literacy. Structured interviews were then conducted to those identified searched documents as playing a role in the development or implementation of the action plan	Four action plans were compared among the results obtained from interview and documentation, including the aim, vision, and audience to target with the action plan, and the negative consequences of limited health literacy	The issues surrounding health literacy appear to create new political debates regarding the reforms to health systems, the need to empower patients to take their health into their own hands, and the necessity of shared decision making in healthcare	Framing health literacy issues on a global scale can initiate important and necessary political debates that could assist in the development of policy and systemic solutions to address the negative health effects experienced with having this issue

Appendix C

Table 6. *Risk Management Assessment (SWOT Analysis)*

Risk Sources			
Internal Factors		External Factors	
Strengths (+)	Weaknesses (-)	Opportunities	Threats
• Project implementer's Spanish language skills • Focus on Hispanic population • Project implementer's knowledge of dyslipidemia and treatment • Stakeholders' motivation and eagerness to assist in the project implementation	• Participant's motivation to improve their knowledge before the project began. • The participants potentially withdrawing • Transportation problems affecting attendance. • Participants getting ill due to multiple comorbidities	• The project implementer could review participant's data without restrictions in the practice's EMR	• Non-compliance issues related to: cultural factors, advanced age, perceived wisdom, and not understanding negative consequences

Appendix D

Table 7. *Evidence-Based Practice (EBP) Intervention Project Budget*

Item	Quantity	Cost	Total	Vendor
Paper	2 reams	$4.5	$9	Office Depot
Pencils	2 boxes	$2.5	$5	Office Depot
Printer Ink	1 box	$35	$35	Office Depot
Roll-up sandwiches	3 small trays	$25	$75	Publix
Water bottles (small)	2 cases	$3.25	$6.5	Publix
Editing Services	1	$5/page	$200	No information available
Statistician Services	1	$40/hour	$80	No information available
Manuscript Binding	1	$100	$100	Staples
Total Paid			$510.50	

Ron and Kathy Assaf
College of Nursing
NOVA SOUTHEASTERN UNIVERSITY | NSU Florida

Appendix E

Participant Cover Letter

To: Potential participant in a research study

From: Edwin S. Ramos, MSN, APRN, AGPCNP-C

Project's Implementer and Doctor of Nursing Practice (DNP) Student at Nova

Southeastern University

Re: Consent Form for Participating in Evidence-Based Practice (EBP) Educational Project

entitled: *Advancing Disease Knowledge and Health Beliefs on Dyslipidemia by Implementing*

Patient Education

Dear Sir or Madam.

I would like to invite you to participate in a voluntary evidence-based practice

educational project, conducted as part of my Doctor of Nursing Practice (DNP) at Nova

Southeastern University (NSU).

The purpose of this EBP educational project will be to increase the disease knowledge

and health beliefs of Hispanic and elderly adult primary care patients with dyslipidemia. As such,

the project will involve a variety of educational intervention focused sessions on providing

information and knowledge on the topic of dyslipidemia to improve the health outcomes of the

participants. Criteria for participation in this study include being an adult and elderly Hispanic

(or Hispanic descent) individual, with the ability to read and write in either Spanish or English,

having been identified as possessing deficient disease knowledge, and having been recognized as

experiencing abnormally elevated levels of total cholesterol and low-density lipoprotein

cholesterol (LDL-C) by serum lipid panel laboratory test results.

Participation will take place in the primary care office of a local physician's medical practice, and the research is expected to last approximately 6 weeks. Participant's expectations include attending an initial disease knowledge and health belief's assessment session and three educational intervention sessions given by the project's implementer and completing a pre- and post-intervention questionnaire before and after the first and last educational intervention session.

Participants will not receive any form of compensation for their time and effort in participating in this research study, and they understand that participation in this project is completely voluntary, and they have the right to withdraw from the project at any time. Furthermore, there are no foreseeable risks for your participation in this educational project, and the expected benefits include the possibility of increasing the participant's knowledge on the topic of dyslipidemia.

Should you decide to participate in this project, your participation is highly appreciated. Sincerely,

Edwin S. Ramos, MSN, APRN, AGPCNP-C

Ron and Kathy Assaf
College of Nursing
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Appendix F

General Informed Consent Form
NSU Consent to be in a Research Study Entitled

Advancing Disease Knowledge and Health Beliefs on Dyslipidemia by Implementing Patient Education

Who is doing this research study?

College: Ron and Kathy Assaf College of Nursing

Principal Investigator: Edwin S. Ramos, MSN, APRN, AGPCNP-C

Faculty Advisor/Dissertation Chair: Marcia Derby-Davis, PhD, RN

Site Information:

Funding: Unfunded

What is this study about?

This is a research study, designed to test and create new ideas that other people can use. The purpose of this research study is to use an evidence-based practice (EBP) educational intervention to increase the knowledge and health beliefs of Hispanic and elderly adult primary care patients with dyslipidemia.
- This study will aim to improve the knowledge and ability of individuals to understand and utilize health information with regards to having high cholesterol levels.
- Hispanic elderly adult primary care patients can potentially benefit from receiving an educational intervention to increase their knowledge and health beliefs, which can positively affect their compliance (adherence) with taking their prescribed medications to treat high cholesterol levels.
- High cholesterol levels in blood (dyslipidemia) represents a potential condition that can lead to heart disease (cardiovascular disease) and other negative health effects that can have damaging results in a person's overall health.

Why are you asking me to be in this research study?

You are being asked to be in this research study because you have been identified as potentially benefiting from participating in an educational intervention that can increase your knowledge of dyslipidemia and can improve your health beliefs related to dyslipidemia.

This study will include about 35 to 40 people.

What will I be doing if I agree to be in this research study?

While you are taking part in this research study, you will be asked to participate in 3 consecutive educational sessions, 1 time per week, lasting about 15 to 20 minutes each and a final session for 30 minutes.

You may have to come back to the MAR Primary Care office site every 8 days for about one (1) month.

Research Study Procedures - as a participant, this is what you will be doing:

The study will consist of three stages described below:
- The identification and screening for participation in this study will be performed by the project's implementer after analysis of the primary care practice's electronic medical record (EMR) which houses each participant in the study, focusing on demographic determinants such as age, ethnicity, a diagnosis of dyslipidemia, and the existence of pharmacologic treatment for dyslipidemia.
- Participants will be scheduled, according to availability, to come to the primary care practice's office, in groups of no more than 13 participants at a time. These groups will be referred to as study groups one (1) through three (3) and will not be randomized.
- Participants will be invited to take part in a series of consecutive and sequential educational intervention sessions on dyslipidemia. Each session is expected to last approximately 30-40 minutes and will allow for a questions and answer session following each session.
- Before the start of the first educational intervention, the completion of a dyslipidemia knowledge pre-educational intervention questionnaire and a dyslipidemia health beliefs pre-educational intervention questionnaire, each consisting of 10-15 questions will be performed, with each questionnaire taking approximately 10 minutes to complete. Following the last educational presentation, the completion of a dyslipidemia knowledge pre-educational intervention questionnaire and a dyslipidemia health beliefs pre-educational intervention questionnaire, each consisting of 10-15 questions will be performed, with each questionnaire taking approximately 10 minutes to complete.
- Following the completion of each educational intervention sessions, participants will be invited to take part of an open discussion on the topic of dyslipidemia and enjoy a light snack, provided by the project implementer.

Are there possible risks and discomforts to me?

This research study involves minimal risk to you. To the best of our knowledge, the things you will be doing have no more risk of harm than you would have in everyday life. There are no foreseeable physical or psychological risks for participation in this study. Your privacy will be maintained because the information obtained from the study will be kept confidential.

What happens if I do not want to be in this research study?

You have the right to leave this research study at any time or refuse to be in it. If you decide to leave or you do not want to be in the study anymore, you will not get any penalty or lose any services you have a right to get. If you choose to stop being in the study before it is over, any information about you that was collected **before** the date you leave the study will be kept in the research records for 36 months from the end of the study and may be used as a part of the research.
What if there is new information learned during the study that may affect my decision to remain in the study?

If significant new information relating to the study becomes available, which may relate to whether you want to remain in this study, this information will be given to you by the investigators. You may be asked to sign a new Informed Consent Form, if the information is given to you after you have joined the study.

Are there any benefits for taking part in this research study?

The possible benefit of your being in this research study is an increased overall knowledge on the topic of dyslipidemia, which we hope will translate into a positive change in enhancing your health literacy skills and an improvement in the adherence to treatment of dyslipidemia. We hope that these factors will contribute to your overall well-being and health. However, there is no guarantee or promise that you will receive any benefit from this study. We hope the information learned from this research study will benefit other people with similar conditions in the future.

Will I be paid or be given compensation for being in the study?

You will not be given any payments or compensation for being in this research study.

Will it cost me anything?

There are no costs to you for being in this research study.

Ask the researchers if you have any questions about what it will cost you to take part in this research study (for example bills, fees, or other costs related to the research).

How will you keep my information private?

Information we learn about you in this research study will be handled in a confidential manner, within the limits of the law and will be limited to people who have a need to review this information. Your privacy will be protected using a system of unique identifiers (including month of birth and the first three letters of the participant's middle name) to link the data collected with the participant providing this information. This data will be available to the researcher, the Institutional Review Board and other representatives of this institution, and any regulatory and granting agencies (if applicable). If we publish the results of the study in a scientific journal or book, we will not identify you. All confidential data will be kept securely in a password protected computer (for the electronic data collected) and a key-locked cabinet for paper information and data collected during the study. All data will be kept for 36 months from the end of the study and destroyed after that time by permanently deleting all electronic files and data and physical shredding of all paper information and data collected during the study.

Whom can I contact if I have questions, concerns, comments, or complaints?

If you have questions now, feel free to ask us. If you have more questions about the research, your research rights, or have a research-related injury, please contact:

Primary contact:
Edwin S. Ramos, MSN, APRN, AGPCNP-C can be reached at:
(813) 935-4744 or (813) 767-1438.
Research Participants Rights
For questions/concerns regarding your research rights, please contact:

Institutional Review Board

Nova Southeastern University
(954) 262-5369 / Toll Free: 1-866-499-0790
IRB@nova.edu

You may also visit the NSU IRB website at www.nova.edu/irb/information-for-research-participants for further information regarding your rights as a research participant.

Research Consent & Authorization Signature Section

Voluntary Participation - You are not required to participate in this study. In the event you do participate, you may leave this research study at any time. If you leave this research study before it is completed, there will be no penalty to you, and you will not lose any benefits to which you are entitled.

If you agree to participate in this research study, sign this section. You will be given a signed copy of this form to keep. You do not waive any of your legal rights by signing this form.

SIGN THIS FORM ONLY IF THE STATEMENTS LISTED BELOW ARE TRUE:
- You have read the above information.
- Your questions have been answered to your satisfaction about the research.

Adult Signature Section

I have voluntarily decided to take part in this research study.

| Printed Name of Participant | Signature of Participant | Date |

| Printed Name of Person Obtaining Consent and Authorization | Signature of Person Obtaining Consent and Authorization | Date |