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Use of Spanish Audio Podcast to Educate Visually Challenged Hispanics with Diabetes

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Walden University
2020

Abstract

Use of Spanish Audio Podcast to Educate Hispanics with Diabetes and Visual Disability

by

Baiju Issac

MSN, Walden University, 2015

BSN, Kaplan University, 2009

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

May 2020

Abstract

Diabetes is the leading cause of death among the Hispanic population, requiring solutions

at the individual, community, and population levels. Self-management helps to manage

diabetes and prevent complications, but it is a challenge in nursing practice. Health care

providers use printed information to teach patients about self-management of diabetes.

However, patients with visual disabilty associated with diabetes may not be able to use

these resources without accommodations Limited English proficiency, low health

literacy, and visualdisabilitycan result in the underutilization of health care services

within Hispanic communities. Therefore, the purpose of this project was to develop a

Spanish audio podcast and lesson plan as teaching tools and to educate staff at an

ophthalmological clinic on the proper use of the tools to teach monolingual Hispanic

patients with type 2 diabetes and blindness. The Lynn model was used by 8 content and

language experts to evaluate the podcast and lesson plan for literacy appropriateness to a

fifth-grade level, quality, motivational language, and cultural appropriateness. The

Spanish audio podcast and lesson plan were determined by the experts to be useful

teaching tools. Guided by Knowles' adult learning theory, staff were trained to use the

podcast and lesson plan for use in educating patients. Formative and summative

evaluations were used to assess the effectiveness of the staff education project. Responses

to the staff education post-intervention questionnaire endorsed the potential effectiveness

of these teaching tools for monolingual Hispanic patients with type 2 diabetes and

blindness. These culturally- and linguistically-appropriate educational tools may enhance

diabetes-related support and improve diabetes self-management among Hispanics.

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Dedication

This project is dedicated to my parents, husband, and my children for their

overwhelming support and encouragement, as well as their unconditional love.

Acknowledgments

I thank God Almighty for endless blessings provided to me with health, wisdom, and the knowledge and understanding needed to achieve my goals as a DNP-scholar.

My sincere gratitude goes to my wonderful husband, Sushil. Thank you for all your support throughout this journey. You have helped with some activities in the house in order to make it easier for me to complete the DNP program.

I thank my daughters, Sandhra, Sanjana, and Saniya, for their love and patience. I will now have time to spend with you when this program is over. A special feeling of gratitude to my parents for their endless prayers for my well-being even though they are miles away from me.

Thank you, Dr. Karen Elmore, my preceptor, for giving me opportunities to stay with her and encouraging me with her life and achievement, and also guiding me on my project. You lead me by being an example of your own life.

Last but not least, I would like to thank my chair, Dr. Robert Anders, as well as Dr. Melissa Rouse and my project committee for their encouragement, constructive comments, and questions. Thank you for the opportunities to help me grow.

Thank you, everyone!

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Section 1: Nature of the Project

Introduction

Diabetes is the leading cause of blindness among the working-age population in the United States; and, visual disability can affect the quality of life and have a negative impact on health conditions among patients with diabetes (Peterson & Kassel, 2017). The barrier to control diabetes depends on the resources available in the community and varies among different ethnic groups. Lack of awareness, cultural influences, low health literacy, and language barriers affect diabetes management skills among the Hispanic population who are affected by diabetes and have limited language proficiency (Mora & Golden, 2017). Appropriate accommodations for alternate formats provide people with diabetes-related visual disability access to use the patient education materials.

Diabetes is a population health threat and remains a global and national health priority that requires solutions at individual, community, and population levels. According to the Centers for Disease Control and Prevention, 30.3 million people in the United States are diagnosed with diabetes, and approximately 12.7% are Hispanic Americans (Rodriguez et al., 2018). The Hispanic population comprises the largest ethnic minority group in the United States, and according to the U.S. Census Bureau, that population is expected to increase from 55 million in 2014 to 119 million by 2060 (Rodriguez et al., 2018). The total estimated cost of diagnosed cases of diabetes in 2017 was $327 billion, which included $237 billion as direct medical costs and $90 billion in reduced productivity (American Diabetes Association [ADA], 2018).

These statistics point towards the importance of educating minority groups and the need to increase health literacy Poorly managed type 2 diabetes results in micro- and macro-vascular complications and end-organ damage. The complications include retinopathy that affects vision. The complications may result in a decline in the functional ability of a person to manage their health condition. The decline may ultimately lead to depression and self-care deficit (Hirai, Tielsch, Klein, & Klein, 2012).

In a localized observational study of Hispanics, diabetes-related complications were the cause of 50% of hospitalizations. Seventy-five percent could have been avoided using effective patient education (Carrillo, Sias, Navarrete, Aboud, & Valenzuela, 2018). Appropriate interventions from health care providers, using necessary health literacy resources, may help to prevent further complications. The understanding of diabetes management and patient education is often not up to date among the provider staff in the targeted setting, due to rapid changes in health care and the team not being aware of the knowledge deficits. Given the rapid advances in the treatment and management of diabetes, many health care providers do not receive ongoing and continuing education. As a result, patients with low health literacy, limited education, and limited English proficiency may not receive relevant information about their health conditions. The limited information may also include the ' 'patient's treatment plan, understanding the importance of engaging in self-management and informed decision-making (Sanchez, Eghaneyan, Killian, Cabassa, & Trivedi, 2017).

The ongoing challenge for health care organizations is training the frontline staff to be responsible for educating patients (Marcus, 2014). The team often overestimates the

' 'patient's knowledge and concludes that more information was given to the patients. Some patients believe that they understand more than they do (Sanchez et al., 2017). Visually challenged Spanish speaking patients are a challenge for staff members who do not speak the same language. Handing out printed information is not helpful because the patients are unable to see or read the content, and the patients might forget onsite verbal instructions.

Health care providers should deliver information that can be understood and is meaningful and culturally appropriate to assist the targeted population in controlling their diabetes to prevent further complications. Health care providers need to have adequate educational material related to diabetes management that a patient can understand and use without the help of others. The information should be able to improve the self-efficacy among visually challenged patients with limited English proficiency. Staff awareness related to a multifactorial patient educational tool that includes blood sugar control, reduction of cardiovascular risk factors, and effective management of the individual and population health outcomes is essential (Kline et al., 2016).

A systematic review and meta-analysis completed by Sacha, Melanie, and Arlene (2015) conclude that diabetes self-management education (DSME), in conjunction with primary care, is effective in improving glycemic control in Hispanic adults with type 2 diabetes. Vieira de Carvalho et al., (2017), in their methodological research study, showed that the educational material developed should improve the knowledge of the blind person on the subject addressed. Education is an essential strategy that should be used by health professionals, especially nurses who do the bulk of patient teaching.

Considering the poor outcomes for people who do not receive diabetes education and a follow-up, this is a significant health and social problem that needs to be addressed. A considerable number of Spanish speaking individuals are of low income, have low literacy levels, and can suffer from blindness because of uncontrolled diabetes. Low literacy is a significant social issue. The Hispanic population embraces the family and society as a means to encourage interdependence, cooperation, stable relationships, loyalty, reciprocity, and solidarity among themselves (Woten & Richards, 2018). As a social change issue, it is essential to assist these individuals in supporting their ability to engage in society at their maximum potential.

Problem Statement

Local Nursing Practice Problem

Hispanic Americans make up the largest foreign-born population in the United States. It is estimated that 75% have limited English language proficiency and low educational achievement (Smith-Miller, Berry, Dewalt, & Miller, 2016). The patients who visit the ophthalmology clinic come as a referral from primary care providers and have a significant vision impairment. This vision impairment can place the patient in a state of anxiety that eventually leads to self-care deficits, leading to other diabetes-related complications. In the United States, health information is mostly available in English, so people with limited English proficiency may have insufficient diabetes knowledge, which undermines diabetes self-efficacy. Combined, these are associated with worsened health outcomes (Smith-Miller et al., 2016). In many cases, the assessment from the patient

interview and the ' 'patient's knowledge related to diabetes management are not enough to control diabetes and prevent complications.

Diabetic retinopathy is the most common cause of blindness in developed countries, and one of the most feared diabetes complications (Haulk, 2018). In the United States, the prevalence of diabetic retinopathy among adults older than 40 is 28.5%, which is about 4.2 million people, while the worldwide prevalence is 34.6%, which is about 93 million affected (Rübsam, Parikh, & Fort, 2018). The visually impaired population has increased exposure to risk factors like physical inactivity, weight gain, inadequate nutrition, low socioeconomic conditions, and difficulty with access to education and health services, leading to information deficit (Vieira de Carvalho et al., 2018). The printed teaching materials in English and Spanish are available for the diabetic patient to use, but those with visual impairment may not be able to read the available material.

The limited English proficiency can lead to miscommunication between patient and provider and potentially result in a lack of follow up (Mora, Kempen, & Sobrin, 2018). Vision impairment limits the functional ability and raises the anxiety level among these patients, and this might limit their capacity to learn all information at one time. Hispanic patients with diabetes, visual impairment, and limited English language proficiency need teaching material that is easily accessible and allows for repeated use. The local nursing problem is the lack of knowledge among the staff of an ophthalmology clinic to provide practical education to patients with vision impairment. The lack of education holds a significant problem in nursing practice because a lack of proper understanding of the disease can further damage the health of the patient population.

Therefore, there is a critical need for health care providers to have a better awareness of the situation and knowledge about resources to help this population. Patient education resources to help Hispanic patients with vision impairment as a diabetes complication are needed to prevent further progress of diabetes-related complications.

The Local Relevance of the Need to Address the Problem

The practicum setting is an ophthalmological clinic located in the central region of the United States. For the fiscal year 2017, a total of 33,149 patients were treated, and among these, 1873 patients were Spanish speaking with vision impairment as a result of diabetes complications. The needs assessment performed in the unit via staff feedback, discussion with the nurse manager, information from a diabetes conference and the interaction with Spanish speaking, visually impaired patients visiting the clinic, was the basis of the proposed project.

Based on the National Health and Nutrition Examination Survey, the centers for disease control and prevention (CDC) reports the prevalence of diagnosed diabetes is higher in Hispanic (13.6%) and non-Hispanic black adults (13.9%) compared with non-Hispanic Asians (10.2%) and non-Hispanic whites (8.5%) and undiagnosed diabetes is even higher among Hispanics (Sanchez et al., 2017). Figure 1 is a graphic representation of the statistics. The undiagnosed rate could vary secondary to factors like lack of documentation, underutilization of health care services; patients are less likely to feel any symptoms related to diabetes in the beginning stage, lack of funding, and lack of awareness.
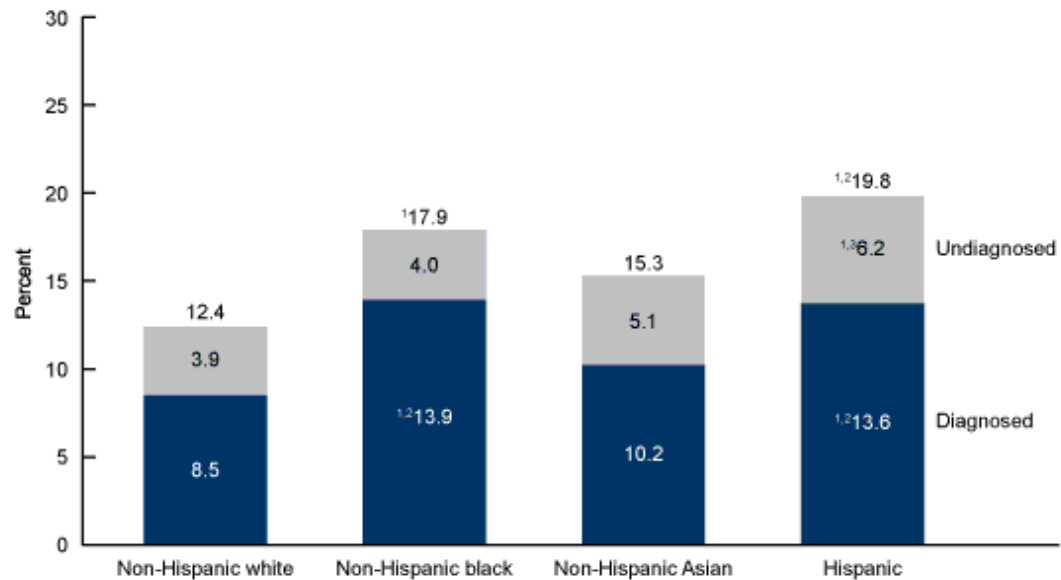
Figure 1. Age-adjusted prevalence of total, diagnosed and undiagnosed diabetes among adults aged 20 and over, by race and Hispanic origin: The United States, 2013-2016.

  Diabetes is the leading cause of death among Hispanic communities and the leading cause of new cases of blindness among working-age adults aged 20-74 years (Kline et al., 2016). Educational interventions developed and evaluated in English regarding diabetes, when translated into Spanish, often are not appropriate to use with Spanish speaking patients. Thus, this may label Spanish speaking Hispanic Americans with diabetes as being non-compliant. As diabetes progresses and glucose levels are high, vision complications develop.

  Healthy People 2020 (the 'nation's health agenda) aims to increase the proportion of persons with diagnosed diabetes who receive formal diabetes education by 10% (Carrillo et al., 2018). That is a reasonable objective and is achievable when all health care professionals work together to reach it. The Agency for Healthcare Research and Quality supports the fact, with strong evidence, that health care facilities that educate the

staff to provide culturally competent care, to predominantly Hispanic patients with chronic illnesses and disabilities, has improved the provision of recommended care, reduced health costs, and enhanced self-management capabilities among patients (Agency for Health Care Research and Quality, 2018). The evidence suggests that culturally tailored interventions are effective in improving knowledge and glycemic control in the Hispanic population (Brunk, Taylor, Clark, Williams, & Cox, 2017).

Project Significance for the Field of Nursing

Nursing and other patient care staff are involved continuously with patient education. Nursing leaders, including advanced practice providers, continue leading changes in the health care arena by empowering staff to motivate the patient to have better patient outcomes and improved quality of life. Emerging evidence demonstrates the benefits of technology-enabled diabetes self-management solutions. Using technology was more effective in improving the glycosylated hemoglobin in patients with type 2 diabetes (ADA, 2019). Although the evidence supports the importance of education, the treatment team typically has a limited understanding of how to educate these patients who are not able to see or read the diabetes teaching material when they need specific support to cope with self-care situations. Consequently, these patients do not have access to appropriate health education material. To improve diabetes control among this population, health care providers must become more aware of the effect of education and culture on diabetes self-care as well as the functional limitations that prevent patients from achieving this goal.

Nurses are first-line providers who have the opportunity to educate patients about their diabetes. Given the incidence of blindness as a result of diabetic control means written, diabetic educational material is not useful. Thus, nurses providing care to these patients can help decrease the educational barrier by using language and appropriate content podcasts. The project provides another method for staff to use to educate patients.

<div align="center">**Purpose**</div>

The purpose using 'Lynn's model is to: (a) evaluate a Spanish language audio podcast for use with visually impaired Spanish speaking individual with diabetes, (b) evaluate the staff development plan used to teach the staff how to use the podcast, and (c) using a pre and post-test that assesses the ' 'staff's learning from the staff development activity.

The Gap in the Practice

According to the ADA (2018), diabetes is an urgent health problem among Hispanics because 12.1% of the Hispanic population is living with diagnosed diabetes in the United States, and the educational information is not provided to this population in an accessible and useful form. Evidence suggests that effective education to patients with functional disabilities like vision impairment should include teaching techniques for coping with vision-related disability and provide assistive technology and home modifications that are specifically designed to address the management of chronic conditions like diabetes (Steinman, 2016). Diabetes educators are limited in numbers. Trained diabetes educators provide quality education, but access is limited due to financial reasons and lack of enough educators in the health care settings (Rotberg,

Greene, Ferez-Pinzon, Mejia, & Umpierrez, 2016). The patient might forget the information received during the session of diabetes education, and for those with visual impairment, there is no backup material to view at a later time. The gap in the practice exists as there is a lack of education by the staff. The staff is unable to provide teaching in a way that accommodates those with self-care deficit. Hispanic individuals with decreased vision and diabetes put themselves at the risk of self-care deficit.

Another barrier is limited English proficiency that can lead to miscommunication between patient and provider, which can potentially result in a lack of follow up (Mora et al., 2018). Vision impairment limits the functional ability and raises the anxiety level among these patients. The impaired vision might limit the patient's capacity to learn all the information at one time. Hispanic patients with diabetes, visual impairment, and limited English language proficiency need a teaching tool that is easy to use repeatedly. Lack of proper education for this population can further damage their health status, and health care providers need to have a better awareness of the situation to be able to help this group of people.

Practice-Focused Questions

The practice-focused questions for this project are:

- Will the evaluation of predeveloped podcasts by experts, using 'Lynn's model, meet evaluation criteria?

- Will the evaluation of the staff development activity, using 'Lynn model meet evaluation criteria?

- After attending the educational sessions regarding the predeveloped

podcast, will the staff meet the learning outcome objectives?

How the Project Addresses the Gap in Practice

Audio podcasts are deemed as an efficient way to learn and keep up to date with information while engaged in various daily life settings (Oommen, & Schwarz, 2017). Integrating technology such as podcasts into traditional health care communication or the dissemination model is an effective and practical strategy for not only delivering quality health-related information to the public, such as clinical practice changes education and health research but also for creating opportunities for the patient to get engaged with the content (Balls-Berry, et al., 2018).

Given the visually impaired, Spanish speaking, a diabetic patient cannot easily access printed information regarding his/her condition, other means of providing language and appropriate learning content are essential. Nursing care begins by understanding how to interact with a patient who has a visual impairment, understand the level of independence at the planning phase, assessing the extent of knowledge deficit related to the condition and providing education using the tools the patient can use with their functional disability (Nowicki, 2015). The staff education project improved the nursing practice by enhancing the confidence of staff to use the Spanish language podcast regarding ADA (2018) health education recommendations for diabetic patients. Improving staff's confidence to use Spanish language podcasts potentially contributes to addressing the gap related to self-care deficit and functional disability. Hopefully, additional health information regarding diabetes, provided in the "patients' primary language, supports improved health outcomes. A literature review revealed that the USA

language literature was silent on having an evaluated podcast available to address the need of the visually impaired diabetic patient.

Nature of the Doctoral Project

Sources of Evidence

Different resources were used for sources of evidence for this project, including a literature search, professional organizational websites exploration, personal experience in the clinic with this type of patient, chart reviews, and personal phone calls to many diabetes-related associations. The literature search was conducted using the Walden University Library. The following databases were utilized; CINAHL, Medline, Thoreau, ProQuest, Academic Search Complete, and the Cochrane Systematic Review, along with other disease-specific websites. The search terms used were diabetes self-management, Hispanic and Latinos, visual impairment, limited language proficiency, and staff education.

The referenced critical websites (from professional organizations) included the American Association of Diabetes Educators, World Diabetes Foundation, Canadian Diabetes Association, International Diabetes Federation, Diabetes Information Clearinghouse, American Health Association, and information from the Center for Disease Control and Prevention (CDC). The search terms used were *diabetes, audio for visually challenged, diabetes education for the blind, diabetes education for Hispanics, limited language proficiency, diabetes among the Hispanic population, barriers to diabetes management among Hispanic Americans,* and *Spanish audio for diabetes management.*

Approach Used for the Project

The organization where this project was completed, in collaboration with a vendor, developed a Spanish language education podcast. The podcasts need expert evaluation before being used with clinic patients. Clear evidence exists that a culturally tailored, audiovisual education tool is useful in improving knowledge, achieving glycemic control, and overcoming literacy barriers among the Hispanic population (Brunk et al., 2017). Lynn's model (1986) was used to evaluate the podcast and the lesson plan, as well.

The theoretical foundation for this education project was ' 'Knowle's adult learning theory. Knowles focuses on six assumptions that include: a) the need to know, b) 'learner's self-concept, c) the role of 'learner's experiences, d) readiness to learn, e) the learner's orientation to learning, and f) other motivation to learn (Cox, 2015). The adult learning theory focuses on 'learner's motivation and the situation that contributes to learning.

The staff completed a summative evaluation of the project before and after the education session. The evaluation aimed to determine if the staff understood how to use the audio podcast. Based on the evaluation results, the team provided additional information regarding the podcast as needed. The evaluation process was an opportunity to improve the outcome of the program. The timeline for the evaluation of the predeveloped podcast and staff education about how to use it is listed in Table 1.

Table 1

Timeline for the Project

Step	Action	Description
1	Evaluation of the audio podcast	The podcast was evaluated using eight experts.
2	Administer the pre-test	Assess the need for education.
3	Introduction of this podcast to the staff	The audio developed by the organization was introduced to the clinic staff.
4	Educational program	Educated the staff related to the Spanish audio podcast
5	Administer evaluation questionnaire	Administered a pre and post questionnaire related to the education program

Concise Statement

The purpose of this project was multifaceted; the initial phase was to evaluate the Spanish audio podcast, developed to improve the health literacy related to type 2 diabetes management, among the Hispanic-American population, with poor English language proficiency and limited vision, provide staff education about how to use podcast and evaluate the education session. The project obtained the evaluation of podcasts from at least six experts who are proficient in both English and Spanish language and possess expertise in diabetes management using the Lynn model (1986).

After evaluation of the podcast, the second phase was to evaluate a staff education program using 'Lynn's model. The purpose was to orient the staff about how to use the Spanish audio podcast for patient education. After evaluation, I provided education to the clinic staff on how to use the podcast. During the final phase, the 'participants' learning

outcomes from the staff development activity of the project were obtained using a pre- and post-assessment questionnaire. The assessment measures their understanding of how to use the podcast for the education of the Hispanic-Americans with poor English language proficiency and limited vision.

Effective patient education practices need to be learned and reinforced by staff educators to improve patient outcomes (Marcus, 2014). Encouraging the staff to educate the diabetic patient and his or her family about how to manage his or her disease using the evaluated podcast increases compliance with treatment and improves outcomes.

Significance

Diabetes is not only the leading cause of blindness but also the seventh leading cause of death in the United States; U.S. Latinos are disproportionately affected by type 2 diabetes with a prevalence of 13% compared to 8% in non-Latino whites (Gutierrez et al., 2019). Visually impaired people depend on others when they feel helpless and overwhelmed. However, they want to achieve independence with activities of daily living and manage health with appropriate training and resources. A survey among people with visual impairment revealed that they might function at a higher level and be more independent when completing activities of daily living with the help of technology (Griffin-Shirley et al., 2017).

Hispanic-Americans are at an increased risk for diabetes and are 40% more likely to die from diabetes, compared to non-Hispanic Caucasians (Dogba et al., 2018). The factors that contribute to poor diabetes management in this group of patients can be culture-specific, due to lack of awareness, language barriers, feeling helpless, and

blindness (Gutierrez et al., 2019). Diabetes self-management education is necessary but often insufficient to sustain the substantial self-management effort needed during a lifetime with diabetes (Spencer et al., 2018).

Stakeholders

The stakeholders involved in this project are the diabetes educators, dieticians, nurses who work in the clinics, ophthalmology technicians, providers, and administrators. The staff who use the Spanish podcast contribute to influencing diabetes management for both patients and families. The Spanish audio podcast provides ongoing diabetes self-management support as this can be downloaded in the ' 'patient's mobile device, and they can listen to it repeatedly. Internet and mobile interventions aiming to promote a healthy lifestyle have attracted much attention because of their scalability and accessibility, low cost, privacy and user control, the potential for real-life settings, as well as opportunities for real-time modifications and interactive advice (Komkova et al., 2019).

Potential Contributions to Nursing Practice

Nursing practice is focused on health promotion, safety, education, prevention of disease condition, prevention of complications, and improved quality of life for better patient outcomes. Delaying or preventing complications is a critical point in diabetes management and is only possible by enhancing lifestyle changes. The use of podcasts in health care alters the way health care practitioners interact with each other and serves as a supplement to traditional pedagogical methods to increase the knowledge of patients and promotes the translation of evidence-based practice to the better understanding of health in the community (Oommen, & Schwarz, 2017). Readily available communication

technologies are more helpful in the Hispanic population as it has the potential to reach, engage, and activate self-care among this targeted population (Ramirez, Wu, & Beale, 2016). The staff education project enables the staff to learn more about the Spanish audio podcast and when to use it for patient education. The audio podcast is a valuable resource for patients and families since it is possible to download and access this information on mobile devices and enable repeated use, as needed.

Potential Transferability to Similar Practice Areas

All health care workers should provide patient education to improve patient outcomes. The evaluation of the podcast helps to boost the reliability of use and increases the confidence of health care staff in using the product. The evidence-based staff education project is a potentially generalizable and easily reproducible strategy that can deliver rapid results, benefiting both staff and patients (Curtis, & Miller, 2018). The findings from this project can be used by all disciplines in the health care field and can aid in the health promotion of this population. The diabetes educational podcast can be used not only in a health care facility but also in all settings where patients primarily have Spanish as their primary language.

Potential Social Change

The visually impaired population must depend on others for information and education. The use of an evaluated Spanish language audio podcast has the potential to provide visually impaired patients with health information regarding the management of their diabetes. Motivational, educational methods that are readily available and easy to use meets functional needs, increase autonomy, and improves health literacy among the

population. The use of technology holds great promise for closing the treatment gap for underserved communities since 75% of the Hispanic population uses a smartphone, and it is comparatively easy to get information to them using this technology (Pratap et al., 2018). Some patients use the braille system, some use iPhones, and they learn how to use the device on their own, and yet another group relied on their family or peers to help them select and learn how to use mobile devices (Griffin-Shirley et al., 2017). Nurses and other staff in the outpatient setting have the technical and scientific skills and competencies to educate patients adequately; however, they require training to provide education to patients with visual disabilities (Coêlho et al., 2018).

Culturally and linguistically appropriate educational material helps to achieve short-term goals of diabetes management and long-term goals of reduction in diabetes-related distress. It also provides enhanced diabetes-related support, and improvement in diabetes self-management knowledge among the Hispanic population (Spencer et al., 2018). Audio podcasts, recorded in the ' 'patient's preferred language, using evidence-based patient educational material, can be used to educate patients at a relatively low cost (Ramirez et al., 2016). The audio podcast can be circulated among Spanish speakers, to facilitate health literacy and enable diabetes self-management skills in the community and potentially contribute to social change.

Summary

Diabetes reduces the quality of life, and if patients are not aware of the potential complications related to diabetes, they can end up with devastating effects, which ultimately leads to disability. The consequences of not addressing low health literacy to

manage diabetes are an increase in the cost of care, poor outcomes, and lost lives (Brunk et al., 2017). The economic burden of diabetes and its complications account for a growing proportion of local and national budgets (Dogba et al., 2018). Empowering staff with adequate training to use the necessary tools to provide education to patients, ultimately motivates patients to make lifestyle changes. A Spanish audio podcast developed by the organization needed to be evaluated using the opinion of experts. The patient education tool was easy to use and an overall understandable tool for many individuals, including those with low literacy levels (Schorr, Hunter, & Zuzelo, 2018).

The knowledge of nurses and other health care staff about the resources available for this vulnerable group of patients allows them to educate and motivate the patient to manage their diabetes better and prevent further complications. Self-management education using a patient-centered approach focused on convenience helps them with motivation and improves literacy level in order to manage this chronic condition effectively. Functional limitations like blindness should not limit the ' 'patient's ability to care for themselves. Ethnic minority patient empowerment-based approaches are effective in improving chronic conditions like diabetes and enhance self-management (Spencer et al., 2018). A health care 'provider's knowledge in delivering effective education empowers the patient to take charge of their health. Education can potentially assist patients in managing their diabetes by reducing or preventing complications and thus, leading to a social change through the improvement of the quality of life.

Section 2: Background and Context

Introduction

Patients with diabetes and visual disability remain disconnected from relevant resources because health care providers are unaware of adaptations or services using technology for people with functional vision loss. Robinson, Friedewald, Desai, and Gordon (2015), in a pilot study, concluded that Hispanic kidney transplant recipients who have limited health literacy gained a significant increase in their knowledge and willingness to change after using culturally sensitive language appropriate electronic education material. High incidence of chronic conditions and poor management decreases the quality of life of patients and increases the health care expenditure.

Educating staff to use an efficient tool to educate patients to improve self-management is an effective strategy. The purpose of this project was to evaluate already developed Spanish audio podcasts and then develop an evidence-based staff education program that enables the staff to use the podcast with their patients. The concepts, models, theories, clarification of terms that inform this doctoral project are explained in this section. Other components that are covered in this section include the synthesis of the description of the model, clarification of words, the significance of this project to the nursing practice, the local background and context of this project related to the project site, and my role as the DNP student.

Concepts, Models, and Theories

There must be a theoretical framework to shape learning activities when providing health education. Using a framework assists the learner in better understanding

the concepts taught and correlating findings to nursing knowledge (Grove, Burns, &
Gary, 2013). Knowles' adult learning theory was applied to this staff development
project.

Theoretical Foundation for the Project

The Spanish audio podcast created by the clinic needed expert content evaluation
before its use with patients, to ensure the reliability of the tool. Lynn (1986) recommends
that at least six experts must review the content of the instrument. The experts who
evaluate the podcast should be able to understand the content, the condition, and the
language used in the audio. The experts who evaluated the podcast were bilingual and
had knowledge related to diabetes, the culture of the Hispanic population, and awareness
of the current resources available in the community.

Adult learning style is different from that of children, as they have some prior
experience about the subject, and the educator should be able to contribute more to the
already known information. Knowles' adult learning theory was used as a framework
component for the staff development education program. Knowles' adult learning theory
focuses on six assumptions; the need to know, learner's self-concept, the role of learner's
experiences, readiness to learn, the learner's orientation to learning, and other motivation
to learn (Cox, 2015). The adult learning theory focuses on learner's motivation and the
situation that contributes to knowledge. Knowles' theory of andragogy has been at the
forefront of adult education theory. Educators and researchers use this theory to explore
new methods for adults to learn efficiently (Conroy, 2018).

Synthesis of Primary Writing

Based on the andragogic assumption, adult learners (a) bring previous experiences, (b) need to understand the content of the education material, and (c) enjoy the content application and problem-solving (Tainsh, 2016). Figure 2 is a graphical representation of how the six assumptions of Knowles's learning theory are interrelated to each other.
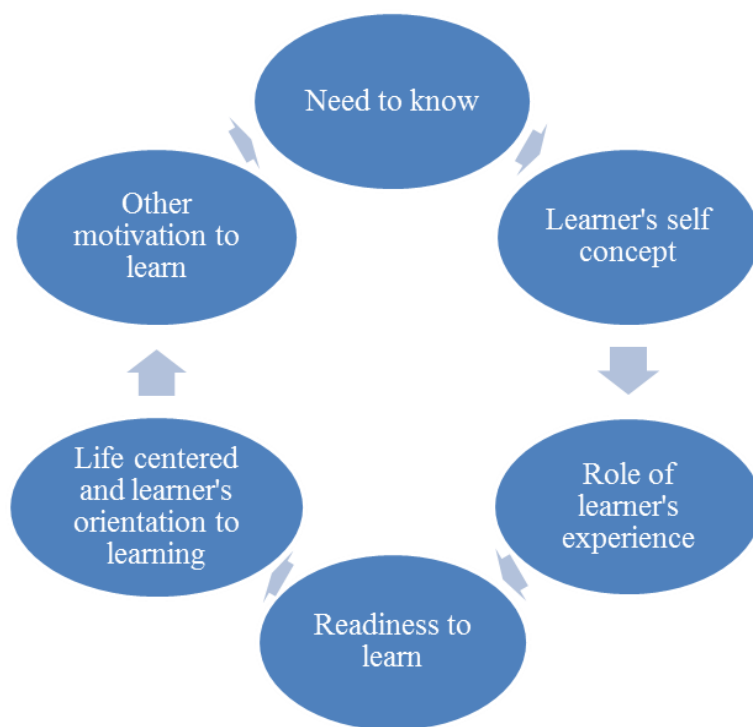
Figure 2. Graphical representation of the theoretical model. Adapted from "Coaching and Adult Learning: Theory and Practice," by E. Cox, 2015, *New Directions for Adult & Continuing Education,* 148, p-27.

According to Knowles, readiness to learn is linked to the relevance of the learning to adult's lives, and they build the knowledge with the pool of experience that can be used as a resource for that learning (Cox, 2015). The formative learning needs assessment helps to open the mind to the present situation that warrants a change, incorporation, and

admiration of previous experience, which makes the adult learners more receptive to the knowledge and change. Figure 3 represents an adult learner's practical use of information that can be used to improve knowledge and understanding. The knowledge is based on all four components of the theory. Adults learn better when they can apply information that builds on previous knowledge, successfully tap into resources, and uses them to expand and enlarge learning (Meeker, & Byers, 2003).
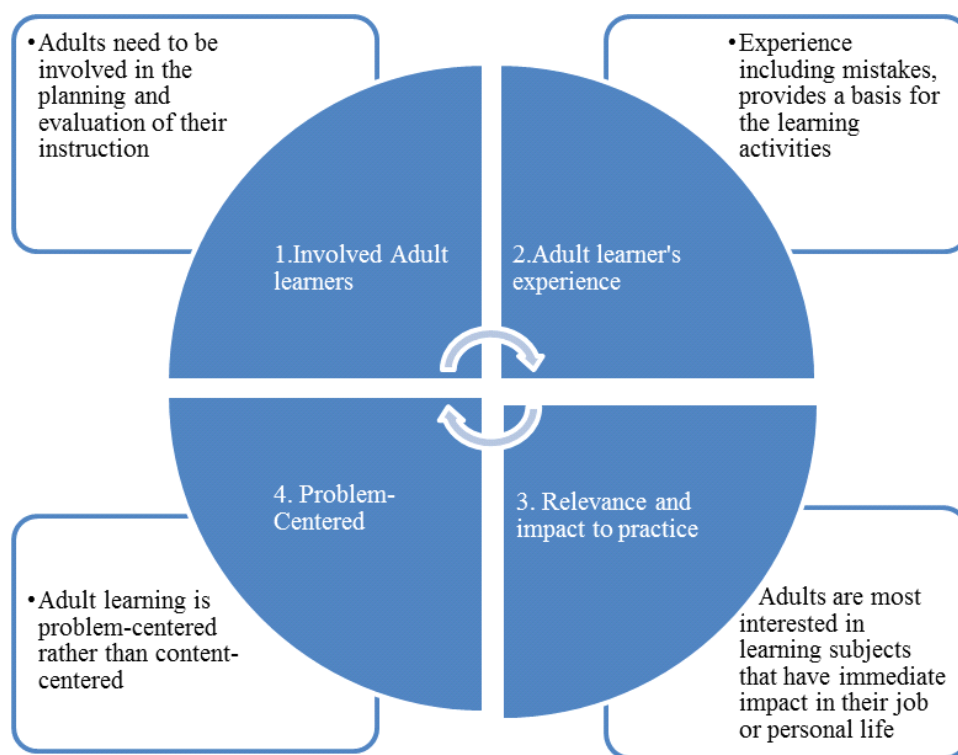
Figure 3. Representation of adult learners' practical use of information. Adapted from "Educational innovations. Data-driven graduate curriculum redesign: a case study," by Meeker, & Byers, 2003, Journal of Nursing Education, 42(4), P-187

Table 2

Clarification of Terms

Diabetes self-management support	Activities that assist the individual with diabetes to implement and sustain the ongoing behaviors needed to manage their illness (Spencer et al., 2018).
Diabetes-related distress	Diabetes-related distress is defined as the emotional and behavioral changes caused by diabetes (Aljuaid, Almutairi, Assiri, Almalki, & Alswat, 2018).
Visual Impairment	Any significant degree of vision loss that a person experiences that markedly limits the ability to perform and meet activities of daily living (NFB, 2018)
Language Barrier in Health Care	Language-based obstacles to successful communication between a patient and a health care provider that have consequences for health care delivery (Segalowitz, & Kehayia, 2011).
Health Literacy	The World Health Organization defines health literacy as the cognitive and social skills which determine the motivation and ability of individuals to gain access to understanding and using the information in ways which promote and maintain good health (Yeh et al., 2018).
Patient-centered education	Patient-centered education is the partnership between health care providers, patients, and families to provide patients with the necessary information to participate in medical decision making (Siddharthan et al., 2016).

NFB - National Federation for the Blind

Relevance to Nursing Practice

History and Existing Scholarship Related to this Project

Global estimation of patients with diabetic retinopathy is 93 million, and among these, 28 million suffer from sight-threatening retinopathy; it is the leading cause of blindness among the working-age adult population (Lawrenson, 2018). Diabetic retinopathy and maculopathy are microvascular complications of diabetes that cause permanent damage to vision and potentially lead to blindness. However, diabetes is also a risk factor for cataracts and glaucoma, which also can result in blindness (Schorr et al., 2016).

Furthermore, Hispanics have less controlled diabetes compared with other ethnic groups (Casagrande et al., 2017). Diabetes-related lifestyle and complexity of care place significant stress on all patients with diabetes. Spanish speaking Hispanic patients may experience additional, unique challenges with interacting and communication, even in health care systems with robust translator services and Spanish speaking providers (Zamudio, Sanchez, Altschuler, & Grant, 2017).

Diabetes is a concern for health care services because the poor management of diabetes can result in devastating results with end-organ damage. This chronic condition is a challenging disease and is hard to live with, as it encompasses a lot of restrictive instructions (Aljuaid et al., 2018). The overwhelming demands for lifestyle changes accompanied by a lack of guiding resources lead to complications, which make the condition even worse for patients with language barriers. Evidence suggests that language barriers are negatively associated with treatment compliance, follow up for chronic

illnesses, understanding of diagnosis and treatment, and the ability to find appropriate health information (Ali & Watson, 2018). Individuals with low health literacy have an increased risk of complications. They also have unintentional non-adherence due to the difficulties in comprehending and following medical instructions (Yeh et al., 2018).

While the availability of effective medications and well-published evidence-based treatment exists, only one-third of Hispanics with diabetes achieve optimal glycemic control (Casagrande et al., 2017). The descriptive study to assess the health care discrimination and its impact on coping with diabetes, among the Hispanic population, concluded that this has a direct relationship with quality of life, anxiety, worry, and a social burden that might contribute to isolation and depression (Scollan-Koliopoulos, Schechter, Caban, & Walker, 2012). Compared to whites, Hispanics who speak only Spanish were less likely to use diabetes education programs (Shi & Li, 2019). The standard practice is to provide printed materials to the patient, expecting that the family reads it to them or if they need help, they ask for help. This practice leaves the family with the burden of patient teaching, and the patient loses their autonomy of self-care.

Current State of Nursing and Recommendations

Nurses and other health care professionals should be responsible for providing effective health education through ensuring there are adequate educational resources that foster quality of care, thus potentially leading to improved patient outcomes (Barbosa Oliveira et al., 2016). A multidisciplinary team approach to provide ongoing care, patient education, and scheduled health assessments for monitoring of disease control and complications has proven beneficial and is promoted globally as a more holistic and cost-

effective way to manage patients with diabetes (Wan et al., 2018). The collection and analysis of this evidence support the potential staff development project's outcome to evaluate an already existing Spanish audio podcast created for visually impaired monolingual Hispanic patients with diabetes to improve their health literacy and diabetes self-management skills.

A study conducted using randomized controlled trials shows that self-management education with comprehensive lifestyle interventions improves glycemic control and cardiovascular risk factor control (Newell, 2018). Information that is easy to understand and accessible helps to relieve the pressure of the condition and enable the patient to learn more about diabetes. The American Diabetes Association (2018) endorses DSMEas a necessary component of diabetes management (Testerman, & Chase, 2018). The barriers that were identified for lack of attendance to DSME classes by the Hispanic population were childcare problems, work hours, lack of transportation, limited class availability, shame, and lack of interest (Testerman, & Chase, 2018).

The National Federation of the Blind (NFB) supports using techniques and products with the audio output so the blind can control their diabetes as efficiently as their sighted peers (NFB, 2018). The National Eye Institute estimates that the number of Americans with diabetic retinopathy is expected to nearly double, from 7.7 million in 2010 to 14.6 million in 2050. Among all functional disabilities, visual impairment is the most apparent sensory problem affecting the compliance of chronic conditions and a remarkable reduction in the quality of life of the affected population (Ghasemi, Moonaghi, Mohajer, Mazlom, & Shoeibi, 2018).

Previous Strategies and Standard Practices

Previously used strategies depend on the family to educate the patient or rely on referring the patient for diabetes self-management education. Education about lifestyle modification and a healthy diet is essential for diabetes control; awareness of these factors is vital to lower carbohydrate and sugar intake among Hispanic/Latino heritage groups (Casagrande et al., 2017). Although family support helps cope with diabetes, sometimes family can be both supportive and obstructive. Diabetes patients with visual disability rely heavily on others like family and friends for support and transportation. Support from the family members varies depending on their availability and resources, which limits them to receive adequate information related to their conditions and improve health literacy for diabetes self-management (Bittner, 2015). However, being unable to complete previously achievable tasks independently has been reported to cause frustration and low levels of self-confidence, leading to dissatisfaction with life and development of depressive symptoms (Anil, & Garip, 2018).

How the Project Advances Nursing Practice

Nursing practice depends on education and useful tools to provide patient education by accommodating the individualized needs of the patient. Functional disability of visual impairment, with limited English proficiency, is a concern for the nursing profession because it is challenging to provide adequate and practical education that empowers the patient and motivates them to have self-management skills. Staff education training programs about the use of the podcast potentially increases their confidence to deliver evidence-based diabetes information to patients (Xu et al. 2018).

Just because a patient appears to understand the teaching during the education session does not ensure the ability to perform self-care, and there is a high probability of forgetting the learning that was heard from the educator (Marcus, 2014). Most Hispanics use a mobile device and incorporate technology into their daily life. Using technology as a means of accessing diabetes education may lead to a patient's behavior change and improved diabetes self-management. The use of technology to understand the material may improve compliance with educational interventions (Burner et al., 2018).

A study done in Brazil supports the use of audio podcast developed by using a language that is easy to understand, but without losing the scientific quality of the subject explored in the podcasts. The audio podcast is a valuable method for sharing the idea (Silva, Paula, Lopes, Toledo & Campos, 2018). Educational material like an audio podcast might help patients remember the content of teaching and use it as needed. The staff education related to podcast use encourages the staff to be able to provide at-risk patients with accurate information, and enable them to self-manage diabetes, support the prevention of complications and contribute to improving health outcomes.

A higher prevalence of diabetic retinopathy exists in South Asian, African, and Latin American descent. There is a positive correlation between duration and poor management of diabetes with diabetic retinopathy. Diabetes associated with visual impairment is a significant public health problem (Lawrenson, 2018). The systematic review reveals that outcome measures, chosen to determine the effectiveness of low vision services, should reflect the ability of them in the daily activities within the home environment, rather than just on clinical outcome (Skelton, 2013). According to Thomas

(2015), using new technologies helps visually impaired individuals with an unprecedented level of independence, access to information, and this aspect of the usefulness of technology should be explored in future research.

Virgili et al. (2018) described a systematic review including randomized and quasi-randomized trials to conclude that portable electronic devices equipped to help the low vision individuals are a potentially cost-effective means of improving the health status of individuals with chronic conditions. Self-management programs developed for Hispanics result in positive health outcomes, including control of diabetes, reduction of health distress, and increased self-efficacy (Anekwe, & Rahkovsky, 2018). Health care professionals must come up with a solution to close the gap in practice with existing patient education methods to reduce health care disparity. Assistive technologies, enabling policies, and skilled staff are the keys to unlocking the barriers that hinder those with visual impairments from effectively accessing health information (Majinge, & Mutula, 2018). Advanced practitioners play a significant role in the primary, secondary, and tertiary prevention of chronic conditions. This doctoral project potentially advances nursing practice by providing valuable health information resources to educate visually impaired Hispanic patients who have diabetes.

Local Background and Context

Summary of Local Evidence on the Relevance of the Problem

Hispanics, mainly Spanish- speaking Hispanic Americans, those with lower levels of education, are foreign-born and have relatively low levels of health literacy (Coxe, Lennertz, & Martine, 2017). The prospective study by Swavely, Vorderstrasse,

Maldonado, Eid, and Etchason, (2014) concludes low health literacy is prevalent in a population with limited education, low English proficiency, ethnic minorities, and economically and socially disadvantaged groups. Low health literacy affects the management of diabetes, because of the imperfect knowledge regarding disease process, and methods to manage this disease results in adverse health outcomes, increased hospitalization and increased utilization of emergency room visits (Swavely et al., 2014).

The Los Angeles Latino Eye Study provides the most extensive documentation of the burden of diabetic visual problems in this community. The study also reveals the patients had trouble in accessing the educational materials offered to people with functional disabilities. Patients with visual impairments do not routinely receive diabetes education services comparable to those provided to patients without vision problems (Fathy, Patel, Sternberg, & Kohanim, 2016). The information points towards the need for an efficient tool and education of the staff about how to use it, as a means of empowering this patient population to manage their condition and prevent further damage to their health.

Institutional and Local Contexts

The problem has a significant effect on the local population because many patients, for which the clinic provides medical management and treatment, have uncontrolled diabetes that affects their vision, even after multiple attempts to educate them by the providers. The language barrier can negatively affect the staff's ability to communicate successfully with the patients and consequently hurt the delivery of appropriate, timely, and efficient care to meet the patient's needs (Ali &Watson, 2018).

Based on the local demographics for Dallas, 42% of the population is Hispanics; among these, 35.1% only speak Spanish. Diabetes affects more than 11% of Dallas County residents when the national average is 9% (Dallas county demographics, 2016). The organization that serves the community population treats more than 39,000 patients with diabetes every year. Vision Health Initiative by the CDC predicts that the rate of diabetic retinopathy will triple by 2050 from 5.5 million people living with diabetic retinopathy to 16 million (Fathy et al., 2016).

Cultural incompetency, language barriers, low health literacy, lack of access to the right educational interventions, along with vision impairment, lead to unwanted stress and complications for these patients. Thus, warranting a need to facilitate education and simplify the lives of blind individuals with diabetes (Fathy et al., 2016).

State and Federal Contexts

State and Federal governments support continuing education and staff development in the field of nursing for better patient outcomes (Curtis & Miller, 2018). The Centers for Medicaid and Medicare services terminate organizations that do not provide quality care and are not focusing on value-based care, specifically for chronic conditions like diabetes (Bodenheimer, & Grumbach, 2016). The Joint Commission also mandates staff education to increase the competency of staff to provide high-quality care (Bodenheimer, & Grumbach, 2016). The International Diabetes Federation (2018) recommends building the capacity of the human resources caring for this patient population through regular training and professional development. The goal was to improve health literacy among patients with diabetes, which leads to promoting and

supporting self-management and increased awareness. Diabetes self-management education and support should be patient-centered, may be given in group or individual settings or using technology, and communicate with the entire diabetes care team (ADA, 2019). The patient education can be delivered in different media formats to accommodate the needs of the population, to raise awareness, increase knowledge, create favorable attitudes, and ultimately motivate people to change behavior (Grigsby, Unger, Molina, & Baron, 2017). The healthcare providers are responsible for a better mode of education to empower patients who are visually-challenged and only speak Spanish.

Role of the DNP Student

My Professional Context and Relationship to the Doctoral Project

My professional role is as an advanced nurse practitioner, working for an eye clinic in a safety net hospital and the referral center for the underserved population. The work obligations include assessing and evaluating patients with visual impairment and referring them to appropriate care if needed. The patient population consists of the Hispanic community with limited English language proficiency. Health care is complex and chronic conditions are on the rise. Doctor-prepared, advanced practice nurse leaders, with innovative thinking, can make changes in health care in order to control chronic diseases, improve quality of care and patient outcomes, and reduce the cost of health care. Patient-directed education is emerging as a cornerstone of patient engagement in the context of health care reform and is a crucial tool in improving patient outcomes (Beaser, Turell, & Howson, 2018). My role was to translate evidence into practice innovations,

empower the staff to bring positive social change that affects a community, and expect results in improved population health.

My Role in the Doctoral Project

I work as an APRN in this setting. A podcast was created but needed to be assessed for use. The staff needed to be educated about the podcast and how to use it. For this project, the experts evaluated the podcast and then educated the staff on how to use it for the targeted patient population.

My Motivations and Perspectives About This Project

The motivation was the patient population that visits the ophthalmology clinic I work for in a public health organization that cares for the underserved population. The patients that visit the eye clinics have a visual impairment in varying degrees, and most of the patients only speak Spanish. These patients rely and depend on their family members to help them read the printed information provided to them. Often these family members are busy with meeting the needs of the family and lack enough support to deal with the situation. People with visual disability do not have many options other than depending on others for diabetes education, even if they desire to be independent. The clinic sees an average of 200 patients per day who have multiple issues, including diabetes, with a diverse range of visual impairment. I am moved by the challenges these patients face in trying to understand their diabetes, so I feel motivated to help them access a tool that improves their care, quality of life, and outcomes.

The goal was to assist the staff so that they can help the patients. The clinic staff wanted to support this patient population. The team was not familiar or comfortable with

efficiently educating these patients due to language discordance and lack of awareness about an effective method of education for the visually impaired population. The organization is participating in a local diabetes control program, and the need to provide education to visually impaired Spanish speaking patients was brought to the attention of leaders at a local diabetes conference. One of the outcomes of the discussion was a request for an audio podcast to help the targeted population. The organization utilized the vendors of the diabetes control program and developed an audio podcast in Spanish with language at the 5th-grade reading level. The podcast addressed diabetic patient education in a culturally congruent perspective. Using the ADA (2018) position statement on patient education guidelines that were divided into sections, the mini sessions to prevent the patient from feeling overwhelmed with too much information all at once.

Potential Biases

The goal of this staff development project was to evaluate this podcast using the Lynn model, with at least six bilingual experts in the field of diabetes (Lynn, 1986). Evidence supports the fact that knowledge related to cultural and linguistic differences among the patients enables providers to establish an appropriate course of treatment to improve patient self-management (Rotberg et al., 2016). Health care providers need to respect the autonomy of patients and provide the required information at their convenience to increase health literacy. Motivating patients for lifestyle changes lay the foundation for better health and preventing mortality and morbidity.

Role of the Project Team

The Use of a Project Team

The site for this doctoral project was a public health system with a team of health care professionals, who involved in the development of the podcast and staff development activity. Team members included diabetes providers, nurses, ophthalmology technicians, optometrists, ophthalmologists, nutritionists, marketing department, and diabetes program coordinators or employed at the project site.

Project Presentation to the Team

My project involved having a team of diabetes educator experts evaluated the podcast to ensure that it is easy to understand and includes the necessary information to motivate the patient. The audio podcast, the script for the podcast, and the evaluation tool were provided to the experts. Lynn's model (1986) was used to conclude the evaluation process and the lesson plan, as well. I used the unit-based council of the eye clinic as the forum to orient the staff to the podcast once evaluated by the expert panel. Ample time was allowed for feedback during the staff development activity regarding the podcast and its use. I developed a PowerPoint presentation for the staff education project. The pre- and post-education evaluation questionnaires were used to assess the effectiveness of the staff education program.

Use of Contextual Insight of Team and Timeline

During the evaluation process, the team of experts was responsible for assessing the content and providing contextual, literacy, and language relevant insights related to the audio podcast. The timeline to complete the evaluation process for the podcast was

four weeks. The staff development presentation and evaluation occurred for over four weeks.

Summary

Health care providers want to empower the patient with needed information in a form the patient can comprehend and use to manage their disease process. The gap in the practice of educating visually impaired patients is growing, and the tool to teach the patient should address their functional, cultural, and language needs. Diabetes self-management is vital to prevent complications from chronic disease and can be achieved by motivating the patient and improving health literacy.

Evaluation of the Spanish language podcast increased the reliability of the education tool, and the education of the staff improves their confidence in using the podcast. It may also improve the quality of life of Hispanic diabetes patients who have visual disability. The audio podcast helps patients to adapt to their disease process and the changes needed to empower themselves to be motivated for lifestyle modifications and improve psychological well-being.

Section 3: Collection and Analysis of Evidence

Introduction

Monolingual visually impaired Hispanic diabetic patients who have low health literacy are vulnerable to other diabetes-related complications due to poor management of the disease. Diabetes complications progress drastically if not controlled, damaging the eyes and potentially other organs.

Hispanics in the United States present a high prevalence of diabetes and diabetic-related complications; they are 1.3 times more likely to suffer from kidney failure than others (Coxe et al., 2017). Although Hispanics are disproportionality affected by diabetes, many do not attend DSME classes. Patients with visual disability have difficulty commuting to the DSME classes. Diabetes education often contains printed materials. However, most of the patient education material is in a format that is not accessible to people who cannot read or even see standard print. Lack of proper tools and awareness among the health care providers to educate them increases the risk of diabetes-related problems among this population (Newell, 2018).

Vendors from the local organization serving this underserved population developed a podcast using the information from the ADA (2018) to address the poor health literacy among the targeted population. The literature supports the education of the staff to provide comprehensive care for diabetes patients (Dulipsingh et al., 2016). After evaluation, training was provided to the team in the clinic to apply this tool for the patient education, to improve the autonomy in the learning process for the blind, monolingual

Spanish speaking patients with diabetes. In this section, the details of the process of development of the staff education project all are discussed.

Practice-Focused Questions

Collaborative care and incorporating useful tools play an influential role in preventing complications and controlling diabetes. There is a gap in the practice as the staff lack confidence to use a helpful education tool and engage the patients in self-care, which is essential to overcome the barriers of the lack of English proficiency, limited literacy, and cultural barriers among Hispanic diabetes patients. The staff education program was designed to provide information related to the podcast with health information in their native language, also at a low literacy level, to Hispanic-Americans with diabetes who have visual impairments as a result of the disease progression. The practice-focused question for this project contains three phases.

- Will the evaluation of predeveloped podcasts by experts, using Lynn's model, meet evaluation criteria?

- Will the evaluation of the staff development activity, using Lynn's model, meet evaluation criteria?

- After attending the educational sessions regarding the predeveloped podcast, will the staff meet the learning outcome objectives?

Clarification of Purpose

The purpose of this project was to evaluate a Spanish audio podcast developed by a community-oriented organization that cares for the underserved diabetic Hispanic population. The second phase was to empower the staff to deliver effective teaching to

the monolingual Spanish community with a visual disability, suffering from diabetes. Experts developed this podcast using the information from the ADA patient education. Upon successful completion of the evaluation of the podcast, the next step was to create and evaluate an evidence-based staff development program to educate the staff about the podcast and its use. The last step was using a pre and post-test design assessment of the staff's learning from the staff development activity.

Operational Definitions

Diabetes self-management skills: Ability of the individual to control the chronic condition of diabetes with adequate knowledge, skills to perform lifestyle modifications, prevent the potential complications and improve the quality of life (Azami et al., 2018).

Evaluation: Evaluation of a Spanish audio podcast is an assessment of the usefulness and relevance of audio podcasts as an educational aid and the opportunity for improvement to use the tool as patient education material (Novak, Mak, & Chang, 2018).

Health literacy: The World Health Organization defines health literacy as the cognitive and social skills which determine the motivation and ability of individuals to gain access to understanding and use information in ways which promote and maintain good health (Yeh et al., 2018).

Monolingual: People who can use only one language to carry on conversational communication with other people (Parker et al., 2017).

Podcast: Podcast is primarily digital episodes of audio information related to a topic that can be accessed online, or available for automatic download and storage in mobile devices for the later and repeated use (Powell, 2016).

Staff education: Educational activities designed to increase knowledge of health care professionals regarding patients' care, and improve their outcomes (Ramberg, Di Lucca, & Hadlaczky, 2016).

Visual Impairment: Is a reduction in vision that is uncorrectable, thus reduces the person's ability to engage in tasks of daily living (Ghasemi et al., 2018).

Sources of Evidence

Participants

Health care providers are the intended participants for this doctoral project. The team consisted of experts to evaluate the audio podcast using Lynn's model (1986). The providers included were certified diabetes educators, a clinic registered dietician, a diabetes nutritionist, a professor of internal medicine, leaders in the diabetes management program at the organization, and ophthalmologists. The certified diabetes educators were chosen based on their experience and knowledge related to specific education related to diabetes management. The registered dietician, professor of internal medicine and clinic, registered dietician, were all subject matter experts related to diabetic diet modification.

A certified diabetes educator was the leader of the diabetes management program, represented her expertise in leading and coordinating the education program for the staff. The ophthalmologists had experience working with vision-impaired patients with diabetes as well as with those who have limited language proficiency. The team participants had expertise in diabetes, leadership skills, and in educating diabetes patients. Another consideration was Spanish and English language proficiency.

I worked closely with the diabetes department of the organization, which included the providers, leaders, and diabetes educators, to generate the evidence and ideas to identify the gap in the practice. The clinic's information technology and the marketing division also assisted by working with the vendors to collect the data from the ADA (2018) recommendations regarding patient education and create a podcast geared to someone with at least a fifth-grade level of reading, to accomplish the goal.

Procedure

The project was a three-step process. The first step was to validate the Spanish translation of the audio podcast using Lynn's model (1986), and the second step was to educate the staff related to its use. The Lynn model recommends using at least six experts to alleviate the concern of chance inflation with fewer than six experts (Rutherford-Hemming, 2015). After Walden University's Institutional Review Board (IRB) approval (approval number: 08-15-19-0458472), I contacted the identified experts in person, to discuss the goal of the educational process and provide the audio podcast, along with the script of the podcast (see Appendix A). The experts were asked to read the text first and listen to the audio podcast and then rate the relevance of the podcast to predefined criteria (see Appendix B for Audio Podcase Evaluation Form). The experts received the evaluation protocol via email, along with instructions about how to evaluate the podcast using an ordinal scale. The evaluations were used to determine the degree to which each of the seven podcasts addresses the patient education needs (Tiase, Hull, Troseth, & Schnall, 2018).

The content evaluation panel was composed of persons who were experts in diabetes and the Spanish language. A four-point ordinal rating scale was used to rate each podcast, and the lesson plan (1 = not relevant, 2 = unable to assess relevance without item revision, 3 = relevant but need minor alterations, and 4 = very relevant and succinct). The experts were provided with the lesson plan for staff education. The experts evaluated the lesson plan using the same Likert scale. The content validity index (CVI) is the proportion of items that received a rating of 3 or 4 by the experts (Lynn, 1986). For example, if five out of eight experts rated the component with either a 3 or 4, the CVI would be 0.83 using Lynn's (1986) model, as shown in Table 3. The education material is useful only if their intended audience can understand, comprehend, and accept the provided information (Chang, Chen, Gau, & Tzeng, 2014).

Table 3

Lynn's Model

Number of experts	Number of experts endorsing item or instrument as content valid						
	2	3	4	5	6	7	8
2	1.00						
3	0.67	1.00					
4	0.50	0.75	1.00				
5	0.40	0.60	0.80	1.00			
6	0.33	0.50	0.67	0.83	1.00	1.00	
7	0.29	0.43	0.57	0.71	0.86	0.88	1.00
8	0.25	0.38	0.50	0.63	0.75	0.78	0.89

Note. Adapted "Determination and Quantification of Content Validity," by M. Lynn, 1986, *Nursing Research, 35*(6),p-384.

If the scores were low, the team examined what area was lacking the criteria to meet a successful evaluation. According to the literature, it is acceptable to take measures

to modify, adapt or exclude some content based on expert opinion and restructure the items to improve understanding and clarity (Paz de Oliveira, & Teixeira de Lima, 2017). The minimum score for a valid assessment for this project was 0.83 (see Table 3). The results of the evaluation tool were reported by descriptive analysis. After a positive assessment, educated the clinic staff about how to use the podcast for diabetes management with the targeted population.

The staff education program occurred at the study site, an outpatient ophthalmologic clinic. Learning objectives for the staff development program were to a) orient the clinic providers regarding the components of the Spanish audio podcast; b) teach the clinic staff how to use the podcast with their patients; and c) improve the staff's confidence to use the audio podcast with their patients. The focus of the education program was on the clinic staff that included nurses, ophthalmology technicians, and medical practice assistants who are responsible for educating the patients. The team was informed about the educational program via email communication and during a monthly staff meeting.

The evaluation of the staff development plan was finalized after the assessment of the podcast using Lynn's model. It included a pre and post-test, PowerPoint slides with oral presentation, followed by an open discussion session, to answer questions or concerns related to the module itself or the audio podcast followed by the posttest (see Appendix C). The short version of the standardized evaluation tool used by the American Nurses Credentialing Centre (ANCC) with four-point Likert scale was used as pre and post-test evaluation questionnaire (Darland, & Shelton, 2013) to solicit the opinions and

perspectives of the staff participating in the education program (see Appendix C). I

request the participants to complete the questionnaire before the education program, and

the same survey was distributed to the identical participants after the intervention.

Descriptive statistics were used to analyze the pre and post questionnaire results.

Protections

During this DNP project, I used careful attention to ensure the ethical protection

of the participants. Written permission was obtained from Walden University's IRB and

the organization before beginning the project. Participation in the evaluation process,

staff education program, and completing pre and post questionnaires was voluntary, and

the participants had the freedom to withdraw from the project at any time. The team was

not paid any incentives in any form to participate in the project. The identity of the

collaboration team was anonymous and discussed the confidentiality terms before starting

the project. All data and materials collected for this project were stored and maintained as

per the policy of the organization. The electronic information was in a password-

protected computer and file; paper documents were locked in a cabinet only accessible to

the project coordinator. The name of the organization was not mentioned anywhere in the

project, and confidentiality was maintained.

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Analysis and Synthesis

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After obtaining the Institutional Review Board (IRB) approval, the evaluation of

the podcast and staff development activity was done using Lynn's model and a four-point

Likert scale for the review to avoid neutral responses and add the reliability of scoring

(see Appendix D for a copy of the assessment tool developed using the Lynn model).

Eight expert responses were used for the analysis using Lynn's (1986) model. A CVI of 0.83 was the minimum acceptable for each podcast, and the podcast that does not meet this criterion were revised and reanalyzed. The experts performed an overall evaluation of the instrument and the staff development activity with comments and suggestions. Before the staff education, I provided an anonymous questionnaire to the participants who served as the pre-test administered to the participants before the PowerPoint presentation. I provided an evidence-based staff education program using Knowles theory, followed by an open discussion with the participants (see Lesson Plan in Appendix E). After the educational offering, the team was asked to complete the same evaluation questionnaire that was used before education, using a four-point Likert scale.

The data obtained from the experts after the evaluation of the Spanish audio podcast was used to synthesize the CVI for each section of the podcast, and the overall assessment was calculated by me using Lynn's model (1986). I collected the open comments and suggestions for insight related to improvement and the necessary changes. The same process was used for the evaluation of staff development activity. The pre and post questionnaire was based on the objectives of the lesson plan. I assessed the pre- and post-education evaluation questionnaire to compare and determine that the education interventions met the objectives of the education program; descriptive statistics were used for statistical analysis of the pre and post response of the questionnaire. The feedback from the staff about education was used for future improvement and to address any gaps in podcast use. A summative evaluation, along with open discussion, was analyzed for the success of the education intervention. Descriptive statistics were used to describe the

assessment of the formative and summative evaluation data from the staff development activity.

The feedback from the staff about education was used for future improvement and to address the gap to enable them to use the podcast for the patients. A summative evaluation, along with open discussion, was analyzed for the success of the education intervention. Descriptive statistics were used to describe the assessment of the formative and summative evaluation data from the staff development activity. The statistics measured the central tendency and variability derived from the evaluation tool completed by the attendees of the staff development activity.

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Summary

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The purpose of this project was three-fold: a) to evaluate a Spanish audio podcast developed to educate limited English language proficient Hispanic patients with diabetes and visual disability; b) assess the staff development activity, and c) educate the staff in the clinic about how to use the podcast for the patients using a pre and post-test to assess learning. The evaluation process was based on Lynn's (1986) model using content and language experts. The education program used Knowles's learning theory as a theoretical framework. The focus of health care was to optimize patient self-management and enable them to manage their health with the support of health care professionals. Reducing the disparity in health care delivery and educating the patients at their convenience to manage chronic conditions at home and improve self-management helps them to improve their quality of life, decrease potential complications and reduce health care costs.

Health education actions developed by professionals can potentially create strategies that enable the empowerment of people to transform the life habits and control of health determinants (Vieira de Carvalho et al., 2018). Health care providers use health education to assist patients in gaining knowledge about their health conditions and improving outcomes. These acts may lead to enhance knowledge and health promotion of a blind person (Vieira de Carvalho et al., 2018).

The Hispanic population has a high prevalence of diabetes and its complications (Brunk et al., 2017). Focusing on educating this targeted population helps to reduce suffering, improve independence, promote productivity, and reduce health care costs. The anticipated outcome of the project was to provide information regarding a disease to visually impaired Spanish speaking patients with diabetes. An eventual outcome (not assessed in this project) is improved outcomes due to a greater understanding of diabetes among affected individuals.

Section 4: Findings and Recommendations

Introduction

Hispanic patients with diabetes and visual disability lack self-management skills to control diabetes. Lack of a useful tool and lack of knowledge among the staff contributes to inadequate self-management among the targeted population. The project focused on the evaluation of a Spanish audio podcast developed to educate the visually impaired Hispanic population with a language barrier and then educate the staff about how to use this tool for patient education. The practice-focused question was as follows: Will the evaluation of predeveloped podcasts by experts, using Lynn's model, meet evaluation criteria? Will the evaluation of the staff development activity, using Lynn's model meet evaluation criteria? After attending the educational sessions regarding the predeveloped podcast, will the staff meet the learning outcome objectives? The evaluation was completed by eight bilingual experts in the field of diabetes using the Lynn model (1986).

Knowle's adult learning theory was used as the theoretical background for staff education. The educational program was developed to assist the staff in improving the knowledge to use Spanish audio podcasts as a teaching tool for Spanish speaking patients with low health literacy and functional limitations with their vision. The ultimate purpose of this project was to enable the staff to tailor the patient's learning style, thus empowering the patients with low health literacy to retain the information and apply to their diabetes self-management at home. The critical elements of the staff education program were from the ADA practice standards of diabetes self-management.

Findings and Implications

A total of eight participants evaluated the podcast. The team consisted of one ophthalmologist, one internal medicine physician, one nurse specialized in diabetes management, and five diabetes educators. I contracted all experts in person to discuss the objective of the project and provide the tool to finish the evaluation. After an explanation of their voluntary role in the project, audio podcasts, forms, and scoring process, each expert independently reviewed and scored the content and each audio podcast.

Podcast Evaluation

A Likert type scale was used for the evaluation survey to assess the podcast. The questions were:

1. How relevant is the audio compared to the script?

2. What is the relevancy of the podcast to ADA recommendations?

3. Is audio relevant to low health literacy knowledge of the Hispanic population?

Then, the team of experts reviewed and evaluated the staff development project using a four-point Likert scale. Once all evaluation forms were collected, reviewed for completeness, and calculated, the final result of all seven different podcasts from eight different evaluators was successfully validated with content validity, because the CVI was above 0.78, according to Lynn's (1986) model (see Table 3). The results of the Likert scale showed that the panel had confidence in the podcast, and it would be helpful and understandable to the Hispanic diabetic patient population who only speak Spanish.

Table 4

Likert Scale Evaluation of Audio Podcast (n = 8)

Audio	Relevancy: Lowest/*h*ighest component CVI	ADA recommendations: Lowest/*h*ighest component CVI	Health *l*iteracy: Lowest/*h*ighest component CVI	Free text comments
A1 Risk assessment	1.00/1.00	1.00/1.00	0.83/1.00	May Change gestational diabetes to Diabetes in pregnancy
A2 Increasing physical activity	1.00/1.00	1.00/1.00	1.00/1.00	
A3 Healthy eating for diabetes	1.00/1.00	0.83/1.00	1.00/1.00	A little too fast at times Mention about carbs outside the plate
A4 Preventing diabetes	1.00/1.00	0.83/1.00	1.00/1.00	
A5 Insulin use	1.00/1.00	1.00/1.00	1.00/1.00	"kidney failure" would be better if it is worded
A6 Information related to blood sugars	1.00/1.00	1.00/1.00	1.00/1.00	"dano o falla de los rinones" rather than
A7 Preventing complications	1.00/1.00	1.00/1.00	1.00/1.00	Insuficiencia renal. May use word usar instaed of utilazar
Overall rating				0.96/1.00

The implication resulting from this project includes valid audio podcasts that can be used by the staff to educate the Hispanic population with diabetes, vision-impairment. The podcast was evaluated to be relevant, follows ADA recommendations, and was literacy appropriate for the targeted population.

Staff Education

Before the education session, a pre-education questionnaire was provided to the participants and requested to complete it anonymously and return it to the sign-in desk. The pre-questionnaire (see Appendix C) included questions about the lesson objective (Questions 1-3), perceived gap in the practice, location of podcast available for the patient to see or download if they know whether patient can download the audio podcast to their smart device, and the result as to whether the education helped the staff improve their confidence in using the podcast (Questions 4-6). In the pre-test questionnaire, 14 participants took part (N=14). The pre-test results in data indicating that the staff has insufficient knowledge about a teaching tool of Spanish Audio podcasts to teach visually impaired Hispanics with diabetes. The post-test questionnaire data indicates that the education intervention met the lesson objectives, and the staff felt confident to use the podcast for patient education. The pre-test questionnaire response and the post-intervention questionnaire results are in Appendix F. The staff education intervention shows significant improvement in the staff knowledge related to the use of Spanish audio podcast.

Recommendations

According to the audio podcast evaluations, the expert panel recommended that the staff can incorporate the podcast for patient education. The experts also supported the use of the podcast in the organization and eventually in all health care fields to encourage patients to increase the awareness of diabetes. The panel and the staff recommended using the podcasts as a scan-able code in the after-visit summary given to patients so they can download the audio podcast to their smart device and listen to it after their clinic visit, at their convenience.

The staff verbalized concerns related to the language barrier and the functional barrier of the targeted population. Patient education with the importance of monitoring self-care improvement, setting an achievable goal, and monitoring stages of improvement are essential, and this project was intended to attain these goals. The purpose of the project was to improve the staff knowledge and competency to enable the clinical staff to teach the patients about diabetes self-care in a manner that patients understand. The final recommendations were to use these useful teaching tools that address the limitations of Spanish speaking individuals at a fifth-grade level literacy.

<div align="center">

Contribution of the Project Team

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The role of doctorally-prepared nurses plays a significant role in the health care system. DNP projects are mostly focused on data mining and leadership. The results of DNP projects affect health care as it has an impact on staff, patients, and the organization. DNP led projects to address clinical problems, such as infection rates, or patient populations such as self-care of patients with diabetes (Beeber et al., 2019). I led the

project; a group of experts evaluated the podcast and the lesson plan. The use of an expert team of staff helped to promote the attainment of the educational goal and improve patient outcomes.

Strengths and Limitations of the Project

The strength of this project included the collaboration and expertise of bilingual professionals who care for the diabetes population and their content expertise. The volunteer participation of the expert panel strengthens this project by having a similar goal of ensuring the staff has the necessary tools and skills to provide education to the vulnerable populations of the community. The strength of this project was that other departments of health care could use this type of audio and video podcasts as a valuable and convenient teaching tool for the patient as patient education is critical in controlling health care costs with user-friendly tools to reduce associated costs.

A limitation of this project was the small number of role representatives to evaluate the project and the small number of staff members who participated in the education program; the sample size was 14. The evaluators used their time to evaluate the podcast. Additionally, future evaluation of the diabetes metric of the patient outcome would be necessary to determine if the staff education project met its expectations.

Summary

The project focused on evaluating an audio podcast and educating the clinical staff to use the podcast to increase the knowledge of the patient and improve the diabetic self- care competency. An evaluation questionnaire was administered using a Likert scale and was considered valid based on the Lynn model of evaluation. The experts evaluated

the lesson plan and concluded the need for educational programs to empower the staff. The participants of the staff education program had overall positive feedback and provided recommendations for using the audio podcast in the future for patient education. Providing education to clinical staff helps in filling the gap created by the lack of diabetic educators in the clinic with the hope of teaching the Hispanic population affected by type 2 diabetes and decreasing the language barrier.

Section 5: Dissemination Plan

The results were presented to the organization's leadership. The leadership team discussed its use in all areas of the organization. The advanced practice nurses utilized the results from the literature and research studies to provide cost-effective care with better patient outcomes. Apart from the scope of this project, I am planning to use this podcast in patient education.

The organization uses an electronic health record for the patient to access their health information at home. The project team plans to introduce this educational tool to the patient in the electronic record where the patient has access and can use it for self-management of the disease.

By collaborating with the information technology department of the organization and the pharmacy, they developed a quick response code (QR code). This code can be included in the after-visit summary, discharge summary, and on the medication bottle, and will enable the patient to scan and listen to the content at their convenience. Once this is successful in the organization, all health care organizations in the metroplex can use this. The benefit of this type of diabetes self-management initiative is that it helps the population improve their quality of life and may result in a remarkable reduction in health care costs. Diabetes-related complications create financial burdens on the health care industry; therefore, educating the population to control their diabetes and prevent complications should help to reduce health care costs.

Analysis of Self

In the context of increasingly complex health care system and declining population health outcome, DNP prepared nurses are trained to practice at the most advanced level of nursing by synthesizing, translating and applying the most recent evidence into clinical practice (Root et al., 2018). My deep involvement in this project enabled me to think deep into the potential contributions that I can provide to health care to be a part of improving the quality of care, empowering the health care staff to educate the patient population. Nursing scholars are the best advocates of the general public and use prevention as a strategy to improve the health care outcome.

My role as a project manager helped me to identify the gap in the practice and the crucial role in building a capable team, the project required collaboration with various departments within the health care arena, indicating the complexity of teamwork. The participants of this project had their own time and resource constraints but also mutual understanding, respect of limitations, and open communication, which helped me build this project to involve stakeholders and gain the trust of the leadership.

Summary

Diabetes management plays a significant role in improving patient outcomes. It is a cascade of the disease processes that need intense education and self-discipline. The staff that encounters the patient during the clinic visit or hospital admission have the control to gain the trust of the patient. Diabetes self-management education provides the patient with a sense of autonomy to be in control of their health condition. Staff education using pre and post-test questionnaires and PowerPoint presentations helps to retain the

information for a long last impact. The project had a significant influence on me in a variety of roles as a leader, scholar, educator, and change agent in the healthcare setting.

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Appendix A: Scripts for the Audio Podcast

A1 Risk Assessment	
Title: Are you at risk for diabetes?	
I don't need to tell you that diabetes isn't something you want.	On audio podcast
You know that it can damage every part of your body – eyes, kidneys, nerves, blood vessels, pretty much everything that helps keeps you alive and well.	
And since you're listening to an audio called "risk assessment," you're probably thinking that you or someone close to you might be at risk for diabetes.	
So, let's go through a little test to find out. Keep track of your points!	Little test Age Gender Family history Blood pressure Exercise Weight
First, how old are you? If you're under 40, that's zero points. 40 to 49 – that's one point. 50 to 59 – 2 points And if you're older than 60, give yourself 3 points.	Age Under 40
Next, are you a man or a woman? You can check. I'll wait.	Gender
If you're a man, sorry guys – you get one point.	
Zero points if you're a woman. But if you're a woman who's ever been diagnosed with diabetes during pregnancy, that's one point.	
Do you have any diabetes in your immediate family, like parents, brothers and sisters? That's another point.	Family history Dad – Mom Sister – Brother – Sister - Sister

Do you have high blood pressure? One point.	Blood pressure
How active are you? If you have a physically active job or if you exercise at least 3 days a week, no points for you.	Exercise
If not, give yourself another point.	
Lastly, how's your weight?	Weight
If you're a little overweight, give yourself a point.	Somewhat overweight
If you're moderately overweight, that's two points	Moderately overweight
And if you're very overweight, add three points to your total.	Very overweight
How'd you do?	
If you scored five points or more, you could be at risk for having Type 2 diabetes.	
But the only way to know for sure is to take a blood test.	
Talk to a doctor about your risk and getting tested.	
But don't take my word for it. I'm just a random voiceover guy.	
Learn more about how you can keep diabetes from taking over your body and your life	

A2 Move your body

Title: Move your body

Script	On audio podcast
There are lots of ways you can control your diabetes or even prevent it altogether.	
One of the best ways is to get yourself moving.	
Getting your body moving won't just help make your muscles stronger. You get benefits everywhere. Like your heart, lungs, brain and, of course, your blood sugar.	
Exercise improves blood flow to all	

those important body parts. It can also help you keep your weight down.	
And exercise also helps relieve stress, helping you feel better and have more energy.	
And, hey, I'm not talking about joining some fancy gym and spending ten hours a week dragging tires and trying to bench press a refrigerator.	
Keep it simple! Take a walk around the block. Park your car a little farther away. Use the stairs instead of the elevator.	
You can even walk in place while you're watching TV. You could be stepping in place while you're listening to me right now! You can do it!	
Little things add up to make a big difference.	
You'll feel better and it will help keep diabetes from taking control of your life.	

A3 Eating healthy

Title: Eating healthy

Script	On audio podcast
Food. Food. Food. It can be good for you. It can be bad for you.	
It is all around you and it's calling your name. The foods you choose and how much you eat can help control your blood sugar and even help prevent diabetes.	
Eating more healthy foods will also help lower your risk of heart disease and cancer among other things.	
Eating the right food and the right amount is vital. Eat too little or too much and your blood sugar may drop or jump to dangerous levels.	
So, plan on eating regular meals during the day to help keep those blood sugar levels in check.	

Now eating right doesn't mean you have to eat a bunch of tasteless cardboard every day.	
Filling your plate with a wide variety of delicious foods helps keep your blood sugar level where it needs to be.	Pasta Beans
Got an empty dinner plate? Fill half of it with veggies. The more color, the better. More colors mean you're getting a nice variety of vegetables for your body.	
Then, you can fill another quarter of your plate with food called complex carbohydrates.	Tortillas Pasta Beans
These foods have higher sugars, like sweet potatoes, pasta, beans or tortillas.	
Still have some space? Fill the rest of your plate with lean protein. Chicken or fish or maybe some low-fat cheese or egg whites.	
I'm not saying you can never eat beef or bacon. Just make it a treat every now and then.	
Good eating habits are fundamental for preventing diabetes from taking over your life.	

A4 Preventing diabetes

Title: Preventing diabetes

Script	On audio podcast
Diabetes is affecting more people than ever before. In Texas alone, there are almost 3 million people with diabetes. And almost 7 million more with pre-diabetes. Is this crazy, or what?	
If you've got family with diabetes, you might think that you're going to get it too. But it doesn't have to happen to you.	
Type 2 diabetes can be prevented. And I'm going to give you six steps you can take to help stop diabetes before it gets to you. Ready? Let's count 'me down.	

One. Get a screening to see if you're at risk for diabetes.	Self-diagnostic test
Two. Get moving. You don't have to run a marathon. Just get moving at least three times a week. Take the dog for a walk or park farther away.	
Three. Make healthy food choices. Instead of candy, have some fresh fruit. And at dinner make sure to throw some vegetables on to that plate.	
Four. Smoking can increase your chance of getting Type 2 diabetes and getting complications of diabetes.	
Five. Limit alcohol. Drinking can cause swings in blood sugar levels so drink in moderation.	Beer
Six. Visit your doctor. Get a checkup and get advice on staying healthy.	
You can stop Type 2 diabetes in its tracks.	

A5 Using insulin

Title: Using insulin

Script	On audio podcast
For some people with diabetes, insulin can be used to help maintain healthy blood sugar levels.	Insulin
Your doctor might be suggesting it for you.	
You also may have heard some rumors and myths about insulin from your friends and family.	Insulin myths
So, for the next 50 seconds, we're going to cut through the myths and give you the true story about insulin.	
Insulin is a hormone your body makes naturally. It lets the body use your blood sugar for energy.	
And it prevents your blood sugar from getting too high.	
But if you have diabetes, your body doesn't make enough insulin, or it might	On strike Special delivery

not be able to use it very well. So, your doctor might want you to replace the insulin that your body's missing to keep your blood sugar under control,	
And prevent the eye, kidney, nerve and heart damage that high blood sugars can cause over time.	
Now despite what you might have heard, insulin won't heart your body.	
Remember, your body makes insulin naturally. So, by using insulin, you're just adding to something that should already be there.	
Also, insulin never causes complications like blindness, numb feet, kidney failure and sores that don't heal. Those issues are caused by high blood sugar. Insulin injections can help control blood sugars.	
And along with exercise, good food choices and regular medical checkups, taking insulin as directed by your doctor is an important step to healthy living with diabetes.	

A6 Understanding your numbers

Title: Understanding your numbers

Script	On audio podcast
Part of having diabetes means keeping track of your blood sugar levels every day.	
Sometimes you'll hear people call it blood sugar. And sometimes you'll hear it called blood glucose. But it's all the same thing.	Blood sugar Blood glucose
Sugar in your bloodstream comes from two places. What you eat and what your body makes.	Insulin
By doing a blood glucose check. You'll be able to tell whether your blood sugar level is too high, too low or on target.	
If your levels are too low, you might feel shaky, tired or dizzy. Or have a fast	

heartbeat. In very serious cases, you might even pass out.	
If your levels are too high, you may be thirsty, have blurry vision, feel tired or even have no symptoms at all.	
Over time, high blood sugar can start to damage your entire body – eyes, kidneys, nerves, blood vessels, and more!	
Keeping track of your blood sugar can tell you if your diabetes treatment plan is working.	
Checking your blood sugars will also help you understand how your food choices, activity and mood are affecting your diabetes.	Breakfast Lunch Dinner
You and your doctor can use those numbers to decide what treatments might be best for you, how your medications are working and what changes in medications or lifestyle might help you to control your diabetes.	
So, write down your numbers and take them with you every time you meet with your doctor.	
It's all part of living healthy with diabetes.	

A7 Preventing Complication

Title: Preventing Complications

Script	On audio podcast
There's no doubt that diabetes can be a scary disease. More people are getting it every day.	
Maybe you know someone who has it and you've seen some of the terrible things that can happen to those with poorly controlled blood sugar. Problems with eyesight, kidneys, nerves, heart. Maybe you've even seen some people die from complications of diabetes.	

But the important thing to remember is that none of those things must happen to you. Take the right steps to control your blood sugar.	
If you've been diagnosed with diabetes, there are things you can do every day to help you live a long, health life. Here's a handy list.	Preventing complications
One. Discuss with your doctor what treatments might be best for you. Agree on a management plan for your diabetes and try to stick to it as best you can.	Management plan
Two. If your treatment plan includes medicine or insulin to control your blood sugar, take them like you're supposed to. Let your doctor know if you're having issues with your medication.	
Three. Make healthy food choices. Choose fresh fruit. At dinner be sure to throw some vegetables on to that plate.	
Four. Get moving. You don't have to run a marathon. Just take the dog for a walk and use the stairs instead of the elevator.	
Five. Keep track of your blood sugar levels and accurately report them to your doctor so that you can both decide how your body is reacting to your treatment	
If your blood sugar is very high or too low, get in touch with your doctor.	Breakfast Lunch Dinner
Six. Visit your doctor regularly to monitor your status and get screened for early signs of any complications.	
All these things can add up to big difference in living with a healthy life with diabetes.	

Readability of Script
Flesch Reading Ease   78.8
Flesch-Kincaid Grade Level   4.7

Appendix B: Audio Podcast Evaluation Form

This is to evaluate a Spanish audio podcast designed at a fifth-grade level, to educate Hispanic patients with visual impairment, diabetes, and low health literacy. The audio is divided into 7 podcasts, and each podcast contains different information. The attachment has Script for the audio. Please read and listen to the audio and provide evaluations and recommendations

Please check next to the box 1= not relevant, 2= unable to assess relevance without item revision, 3= relevant but need minor alterations, and 4=very relevant and succinct

A1 Risk Assessment

How relevant is the audio compared to the script?

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Podcast relevancy to ADA recommendations?

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Audio is relevant to low health literacy knowledge of Hispanic population.

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Open Comments

A2 Increasing Physical Activity

How relevant is the audio compared to the script?

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Podcast relevancy to ADA recommendations?

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Audio is relevant to low health literacy knowledge of the Hispanic population.

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Open Comments

A3 Healthy Eating for Diabetes

How relevant is the audio compared to the script?

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Podcast relevancy to ADA recommendations?

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Audio is relevant to low health literacy knowledge of the Hispanic population.

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Open Comments

A4 Preventing Diabetes

How relevant is the audio compared to the script?

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Podcast relevancy to ADA recommendations?

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Audio is relevant to low health literacy knowledge of the Hispanic population.

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Open Comments

A5 Insulin Use

How relevant is the audio compared to the script?

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Podcast relevancy to ADA recommendations?

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Audio is relevant to low health literacy knowledge of the Hispanic population.

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Open Comments

A6 Information related to blood sugars

How relevant is the audio compared to the script?

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Podcast relevancy to ADA recommendations?

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Audio is relevant to low health literacy knowledge of the Hispanic population.

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Open Comments

A7 Preventing Complications

How relevant is the audio compared to the script?

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Podcast relevancy to ADA recommendations?

    ▬ 1 = not relevant

    ▬ 2 = unable to assess relevance without item revision

    ▬ 3 = relevant but needs minor alterations

    ▬ 4 = very relevant and succinct

Audio is relevant to low health literacy knowledge of the Hispanic population.

    ▬ 1 = not relevant

    ▬ 2 = unable to assess relevance without item revision

    ▬ 3 = relevant but needs minor alterations

    ▬ 4 = very relevant and succinct

Open Comments

Overall Rating
How relevant are the components in the podcast evaluation in meeting the ADA recommendation?

    ▬ 1 = not relevant

    ▬ 2 = unable to assess relevance without item revision

    ▬ 3 = relevant but needs minor alterations

    ▬ 4 = very relevant and succinct

Open Comments

Appendix C: Educational Intervention Pre and Post Evaluation Questionnaire

Lesson Objective: To orient the clinic staff regarding the components of the Spanish audio podcast. Please rate your degree of orientation regarding the elements of the Spanish audio podcast. Please mark the square that corresponds to your answer.

- Oriented
- Somewhat oriented
- Somewhat not oriented
- Not oriented

Lesson Objective: To teach the clinic staff how to use the podcast with their patients. Please rate your confidence in how to use the podcast with your patients.

- Confident
- Somewhat confident
- Somewhat not confident
- Not confident

Lesson Objective: To improve the staff's confidence to use the audio podcast with their patients. Please rate your agreement that the educational program helped improved your confidence to use the audio podcasts with my patients.

- Agree
- Somewhat agree
- Somewhat disagree
- Disagree

A gap exists in the current practice of diabetes self-management education for the monolingual Hispanics with diabetes and vision impairment.

- Agree
- Somewhat agree
- Somewhat disagree
- Disagree

Where is the podcast available for the patient to see or download?

- Site diabetes website
- Patient mychart
- Scanning the barcode in the after-visit summary
- Google search

The patient is able to download the audio podcast to their smart device.

- True
- False

Overall the staff education regarding the Spanish audio podcast helps the staff to use this tool for the patient and will help to improve their quality of life.

- Agree
- Somewhat agree
- Somewhat disagree
- Disagree

Appendix D: Lynn's Assessment for the Staff Development Project

Objective 1. To orient the clinic staff regarding the components of Spanish audio podcast. How relevant is the objective for the staff development activity?

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Objective 2: To enhance the knowledge of the staff about the availability of the audio podcast to use as a resource to educate the Hispanic population with diabetes and vision impairment. How relevant is the objective for the staff development activity?

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Objective 3: To improve the skills of the clinic staff on how to use the podcast with their patients. How relevant is the objective for the staff development activity?

— 1 = not relevant

— 2 = unable to assess relevance without item revision

— 3 = relevant but needs minor alterations

— 4 = very relevant and succinct

Objective 4. To improve the attitude and confidence of the staff to use the audio podcast with their patients. How relevant is the objective for the staff development activity?

        — 1 = not relevant

        — 2 = unable to assess relevance without item revision

        — 3 = relevant but needs minor alterations

        — 4 = very relevant and succinct

How relevant these educational interventions contribute to the perceived effectiveness of current practice?

        — 1 = not relevant

        — 2 = unable to assess relevance without item revision

        — 3 = relevant but needs minor alterations

        — 4 = very relevant and succinct

The relevancy of this education intervention to build overall health literacy and to prepare the patient for his/her journey through the healthcare system?

        — 1 = not relevant

        — 2 = unable to assess relevance without item revision

        — 3 = relevant but needs minor alterations

        — 4 = very relevant and succinct

The relevancy of the educational intervention to promote participant's knowledge, skills and attitudes.

        — 1 = not relevant

        — 2 = unable to assess relevance without item revision

        — 3 = relevant but needs minor alterations

        — 4 = very relevant and succinct

The overall relevancy of this project to address the gap in the practice of the clinic staff to educate the monolingual Hispanic patients with vision impairment

      — 1 = not relevant

      — 2 = unable to assess relevance without item revision

      — 3 = relevant but needs minor alterations

      — 4 = very relevant and succinct

Open Comments

Appendix E: Lesson Plan for Staff Development Project

Staff Development Project for Ophthalmology Clinic			
Goal: Increase the clinic staff's knowledge of how to use a Spanish audio podcast for Spanish speaking Hispanics with diabetes and vision impairment			
Objectives	Methods/Strategies	Timeframe	Outcome measurement
1. To orient the clinic staff regarding the components of Spanish audio podcast. 2. To enhance the knowledge of the staff about the availability of the audio podcast to use as a resource to educate the Hispanic population with diabetes and vision impairment 3. To improve the skills of the clinic staff on how to use the podcast with their patients. 4. To improve the attitude and confidence of the staff to use the audio podcast with their patients.	Sharing a full explanation of the gap in the practice.

Summative evaluation using and pre and post questionnaire

Instructional tool: Power point slides with oral presentation.

Evaluation method: descriptive statistics | Six weeks | Improved knowledge, skill and attitude to use the audio podcast as a resource to educate monolingual Hispanic diabetic patients with vision impairment. |

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Appendix F: Staff Evaluation Results

Staff	Lesson Objective: To orient the clinic staff regarding the components of the Spanish audio podcast. Please rate your degree of orientation regarding the elements of the Spanish audio podcast.		Lesson Objective: To teach the clinic staff how to use the podcast with their patients. Please rate your confidence in how to use the podcast with your patients.		Lesson Objective: To improve the staff's confidence to use the audio podcast with their patients, please rate your agreement that the educational program helped improve your confidence to use the audio podcasts with patients.		A gap exists in the current practice of diabetes self-management education for the monolingual Hispanics with diabetes and vision impairment.		Where is the podcast available for the patient to see or download?		The patient is able to download the audio podcast to their smart device.		Overall, the staff education regarding the Spanish audio podcast helps the staff to use this tool for patients and will help to improve their quality of life.	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1	Somewhat Oriented	Oriented	Somewhat not confident	Confident	Somewhat agree	Agree	Agree	Agree	Scanning the barcode in the after-visit summary	Site diabetes website, Scanning the barcode in the after-visit summary	False	True	Somewhat agree	Agree
2	Oriented	Oriented	Confident	Confident	Somewhat Agree	Agree	Somewhat agree	Agree	Site diabetes website	Site diabetes website	False	True	Agree	Agree
3	Not oriented	Oriented	Somewhat not confident	Somewhat confident	Somewhat agree	Somewhat agree	Agree	Agree	Site diabetes website, Google	Site diabetes website	False	True	Somewhat agree	Agree
4	Not oriented	Oriented	Confident	Confident	Agree	Agree	Somewhat agree	Agree	Site diabetes website	Site diabetes website	N/A	True	Agree	Agree
5									Site diabetes website	Site diabetes website	False	True		Agree
6	Not oriented	Oriented	Somewhat confident	Confident	Somewhat agree	Agree	Somewhat agree	Agree	Site diabetes website	Site diabetes website	False	True	Agree	Agree
7	Not oriented	Oriented	Somewhat confident	Somewhat confident	Somewhat Agree	Agree	Somewhat agree	Agree	Google	Site diabetes website	False	True	Somewhat agree	Agree
8	Somewhat oriented	Somewhat oriented	Somewhat oriented	Somewhat confident	Somewhat Agree	Agree	Somewhat agree	Agree	Patient Mychart	Site diabetes website	False	True	Agree	Agree
9	Not oriented	Oriented	Not confident	-	Somewhat Agree	-	Somewhat agree		Google		True		Agree	-
10	Somewhat oriented	Somewhat oriented	Somewhat oriented	Somewhat confident	Somewhat disagree	Somewhat agree	Agree	Agree	Google	Google	False	True	Disagree	Somewhat disagree
11	Not oriented	Oriented	Somewhat confident	Confident	Somewhat agree	Agree	Agree	Agree	Site diabetes website	Site diabetes website	True	True	Agree	Agree
12	Somewhat oriented	Oriented	Somewhat not confident	Confident	Somewhat disagree		Somewhat agree		Site diabetes website		False		Somewhat agree	
13	Not oriented	Somewhat oriented	Not confident	Somewhat confident	Somewhat Agree	Somewhat agree	Agree	Somewhat agree	Google	Patient Mychart	True	True	Agree	Agree
14	Not oriented	Oriented	Not confident	Confident	Somewhat agree	Agree	Agree	Agree	Google	Site diabetes website	False	True	Agree	Agree