Enhancing Self-Efficacy in Diabetic Foot Ulcer Management

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She has no known conflict of interest to disclose.

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Abstract

Objective: This quality improvement project aims to assess the effect of audiovisual education on patient confidence in caring for their diabetic foot ulcers (DFU). Diabetes care costs the United States healthcare system $327 billion annually (CDC, 2022). A high-cost sequela is DFU that lead to chronic pain, wound infection, and amputation. Literature review revealed that audiovisual education is a valid and accessible tool to increase self-efficacy behaviors (SEB) in caring for DFU. The Health Belief Model guided project development. Methods: The VELUSET tool, with an overall α of 0.931, was adapted for DFU. A pre- and post-survey evaluated the effect of audiovisual wound education on patient SEB of adult patients fluent in Spanish or English with DFU at an outpatient wound clinic over three clinic visits. Patients were recruited as part of their regularly scheduled diabetes wound care visits with follow-ups consistent with regular scheduling with an n= 6. Results: Inferential statistics revealed the following results: Pretest (M = 56, SD = 4.552) and Posttest (M = 58.50, SD = 1.73), t (3) = -1.61, p = .206, significant p value set $p = \leq 0.05$. The effect size, measured by Cohen's d, is d= 0.80, indicates a large effect. Conclusion: Audiovisual education can increase self-efficacy in performing wound care techniques for patients with diabetes. Further evaluation of education techniques is needed to improve patient outcomes.

Keywords: audiovisual, diabetes, wound, education, self-efficacy

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Access to wound care is a long-standing problem for the uninsured, refugees, persons experiencing homelessness, and people with limited access to healthcare (Sen, 2019; Green-Morris, 2019; Callender et al., 2021; Nussbaum et al., 2018). Even when access is available, there is still a gap in the patient's wound care education, resulting in inconsistencies and the need for education reinforcement. Inadequate health literacy precipitates patients' inability to effectively care for their wounds, placing them at a greater risk for infection, sepsis, necrosis, pain, or amputation (Sen, 2019; Green-Morris, 2019; Jain et al., 2022; Miller, 2016). Increasing health literacy levels may promote positive self-efficacy behaviors (SEB) (Abrar et al., 2020; Jain et al., 2020; Kim & Utz, 2019; Lor & Backonja, 2020; Molavynejad et al.,2022; Navarro et al., 2021; Schecter et al., 2020). Subsequently, SEB can allow for increased wound healing and decrease costly adverse events such as infection, pain, sepsis, or amputation. Accessible wound care education that bridges the gap of low health literacy can facilitate wound healing. The purpose of this project is to provide audiovisual education (AE) for patients with diabetic foot ulcers (DFU) to increase their self-care behaviors and teach patients to identify DFU care and identify warning signs of infection and when it is appropriate to contact a medical professional. This manuscript explores a doctoral quality improvement project that implemented an evidence-based audio-visual diabetic foot ulcer educational intervention in a community-based charity clinic with the aim of improving patient self-efficacy in wound management.

Problem Statement

Although there is no standardized definition for the length of time that makes a wound chronic, the consensus among those who work with wounds is healing time greater than four weeks (Atkin, 2019; Jarbrink et al., 2016; Bowers & Franco, 2020.) Chronic diseases and their

side effects and sequelae are heightened by social determinants of health (SDOH) (Centers for Disease Control and Prevention [CDC], 2022a; CDC, 2022b; Medicaid.gov (n.d.a); Medicaid.gov (n.d.b); National Center for Health Statistics, 2023; Maxmen, 2019; Sen, 2019; Nussbaum et al., 2019). One significant sequela among chronic diseases such as diabetes mellitus (DM), vascular disease, heart disease, and renal disease is the development of chronic wounds (Bowers & Franco, 2020; Atkin, 2019; Jarbrink et al., 2017; CDC, 2022c). Most people with chronic wounds have at least one of these diseases if not two or more (CDC, 2022c). Inadequate health literacy precipitates patients' inability to effectively care for their wounds themselves, placing them at a greater risk for infection, sepsis, necrosis, pain, or amputation. National initiatives regarding SDOH include creating policies and committees and providing funding to combat identified SDOH for the U.S. population (CDC, 2022a; CDC, 2022b).

Purpose and Rationale

In 2021, U.S. healthcare expenditure was 4.1 trillion dollars (CDC, 2022c). Of that amount, 90% was spent on chronic conditions, including $371 billion related to diabetes mellitus (CDC, 2022d). The need for health literacy intervention for patients with wounds must be addressed. Underprivileged patients with one or more SDOH disadvantages are at risk for chronic wound sequelae. This paper aims to explore the problem of low health literacy levels as they pertain to patients with wounds and examine an intervention to promote SEB as they pertain to wound care and DM. Increasing health literacy levels may promote positive SEB. Subsequently, SEB can allow for increased wound healing and decrease costly adverse events such as infection, pain, sepsis, or amputation.

Background and Significance

The CDC (2022c) estimates that for every ten adults in the U.S., six have at least one chronic illness, and four of those six adults have two or more chronic illnesses. The cost of chronic wounds is high in healthcare systems. In the year 2021, U.S. healthcare expenditure was 4.1 trillion dollars. Chronic wounds, particularly those due to comorbid conditions such as DM, often result in amputations (Bowers & Franco, 2020; Callender et al., 2021). Without intervention, patients with chronic disease will continue to develop wounds. In turn, these wounds will develop into chronic wounds, adding to the $4.1 trillion annual cost of U.S. healthcare. Targeting health literacy for the homeless, uninsured, and underinsured can affect increased healing of wounds, leading to improved wound healing, improved health outcomes, and decreased cost to the U.S. healthcare system.

Population

The population of interest is adults with DFU. The CDC (2022e) estimates that 37.3 million Americans have diabetes, with 1.4 million diagnosed in 2019. Diabetes mellitus is a chronic condition that requires lifelong management and is often accompanied by other chronic conditions (Bowers & Franco, 2020; Atkin, 2019; Jarbrink et al., 2017). Every person who has DM is at risk of developing a foot ulcer. Fifteen percent of persons with diabetes will develop a diabetic foot ulcer over their lifetime, and approximately six percent of persons with a diabetic foot ulcer will require a hospitalization (University of Michigan Health, 2022).

Interventions

Digital health equity increases access to care, allowing those who might be at a disadvantage due to other SDOH to access healthcare (Crawford & Serhal, 2020). Health literacy and subsequent SEB can be improved through educational classes, handouts, brochures, audio-visual sources, and demonstrations (Abrar et al., 2020; Callender et al., 2021; Green-Morris,

2019; Khunkaew, et al., 2019). Literacy level, not to mention health literacy level, are two barriers (Callender et al., 2021; Lin et al., 2022). Validated audio-visual media that patients can watch while in the waiting room, at home, or on-demand, in their primary language has the potential to reach patients and their caregivers consistently throughout the wound care process (Crawford & Serhal, 2020; Chin & Mansori, 2018; McNab & Skapetis, 2019; Miller, 2016; Lor & Backonja, 2020).

Comparison/Current State

Current accepted wound care guidelines include keeping a wound clean, dry, and infection free to promote healing (Green-Morris, 2019). Practice varies from clinic to clinic across the country for how teaching and patient learning is evaluated. Some provider, nurse and medical assistant teaching are all possible delivery methods of wound care education.

Outcome

The desired outcome is to reduce the chronicity and burden of wounds in vulnerable patient populations with multiple SDOH risk factors (Callender et al., 2021). The desired future state is that patients would have access to validated wound care instructions they could use to learn the technique or refresh on steps to increase SEB. This would provide consistent education during an initial visit and provide patients and their caregivers with an accessible method of learning the education, at their own convenience, in their own language.

The common theme that emerges from literature review is the need for digital access to educational materials in a digital world. New interventions and techniques are needed to reach people who are at risk due to comorbidities and social determinants of health. The disparities of transportation and lack of time can begin to be met by bringing education to the patient and their

caregivers. Audio-visual education provides an access point to healthcare that pre-pandemic was not common, accepted or many times realistic.

Internal Data

A free clinic in the southwest United States that serves the poor, homeless and uninsured, uses volunteer provider hours to provide critical healthcare access. The mission of the organization, with the motto heal, clothe, house, serve, is to stabilize patients' chronic conditions or give them a home post-hospital discharge for a safe transition of care back into the community. One of the wound care providers identified several gaps needed for the patients served at the clinic:

1. There is a need for patients with wounds to have consistent, reliable, validated wound care education during their visits to perform wound care at home.
2. There is a need for patients or their caregivers to access education for wound care once they leave the clinic.
3. There is a need to educate patients and caregivers in their primary language.

Their free medical clinic is dedicated to the concept that everyone deserves access to care, especially those with multiple SDOH disparities. Initial education is often forgotten or misremembered due to the overwhelming nature of receiving healthcare. The wound clinic provider has noted inconsistencies with verbal education provided by volunteer ancillary staff. Associated factors contributing to the identified educational gap include the rotating nature of the voluntary staff, providers, and nurses. Other factors are the need for interpretation if a provider does not speak the same primary language as the patient. This requires the wound care instructions and teaching to be interpreted, which may be interpreted differently if the interpreter is a different person. Another contributing factor is the frequent need for assistance with wound

care, but the caregiver is absent at appointments to learn the instructions from the healthcare team. The caregiver is then left to learn the instructions from what the patient recalls. Books, printouts, or pamphlets are often lost, left behind, or ignored. Classes require funding for rooms and staff; participants need transportation and time to attend classes. Current practice is for a wound care provider to provide initial education and wound treatment orders, then have ancillary staff repeat education with some inconsistency. The patients at the clinic demonstrate a need for consistent wound care instruction and increased SEB.

PICOT Question

A review of the literature led to the clinically relevant PICOT question: “In adults with DFU, how does video wound care education compared with current practice affect knowledge of how to care for DFU?”. This PICOT question led to an exhaustive literature search.

Search Strategy

A thorough search of the PubMed, Cumulative Index of Nursing and Allied Health Literature (CINHAL), and Academic Search Premier (ASP) electronic databases was conducted over eight weeks from February to March 2023 of publications dating back to 2017. These databases were selected based on their reputation for evidence-based, solid, peer-reviewed articles and a plethora of access to reputable nursing and medical journals. Levels of evidence considered include systematic review (SR) or meta-analysis of randomized control trials (RCTs), RCTs, control trials (CTs), and case or cohort-controlled trials. High levels of evidence should be applied to new and emerging digital interventions to validate their reliability and feasibility in clinical practice.

Keyword Selection

Keyword selection for Pubmed, CINAHL, and ASP data search included *adult(s), wound(s), video education or video instruction or educational video, digital education, audiovisual media, wound healing, wound care, wound management, foot wound, diabetes, diabetic wound, diabetic ulcer(s), diabetic foot ulcer,* and *diabetic foot*. Keyword search for the CINAHL database included keyword selection and Boolean/phrase with expanders to apply equivalent subjects. Keywords were systematically entered into each database to retrieve as many results as possible within the selected timeframe.

Initial and Final Search Yields

Initial search results for PubMed yielded 947,577 articles, results for CINHAL yielded 21,382 articles and results for ASP yielded 533 articles. Search limits applied to search for Boolean/phrase and publish date from January 1, 2017. These limits lowered the number of articles to 1,392 between the three databases. The final yield of 358 articles from the three databases was reviewed, 154 articles from PubMed, 113 from CINHAL, and 91 from ASP. Articles were eliminated if their title or abstract did not meet inclusion criteria to support the identified PICOT question. Literature in the final review included those that reflected chronic health conditions and a digital, technological, or audiovisual intervention to measure patient self-efficacy or self-management behavior or the effect of the intervention on knowledge for self-efficacy or self-management behaviors.

Limitations, Inclusion, and Exclusion Criteria

Limitations to these searches included patients with other chronic conditions, as DM is often associated with comorbid conditions. Therefore, articles that include additional comorbid conditions were selected as they contribute to wound healing and can affect self-management behaviors. Reference lists of included papers were examined to find additional papers that met

inclusion criteria. Exclusion criteria included published dates before 2017, subjects younger than 18, and studies published in a language other than English. The final literature review narrowed 45 articles to 10, including two SRs, two RCTs, three cohort studies, one cross-sectional study, one quasi-experimental study, and one SR of qualitative data. Gray literature, including CDC websites, current diabetic guidelines, and national initiatives for diabetes, were searched, as well as the psych info database. These searches led to additional data and information for this paper's background and significance sections but did not generate new information or articles for the literature review.

Critical Appraisal and Synthesis of Evidence

Melnyk and Overholt's (2019) rapid critical appraisal process was utilized to appraise the literature selected for the review, as well as rate the level of evidence. Audiovisual media and healthcare delivery by technology are recent interventions becoming more popular but extremely limited in wound care, with or without diabetes. Pulling articles related to audiovisual media and chronic disease or diabetes yielded various levels of evidence selected in the studies chosen, including nine quantitative studies (See Appendix A, table A1) and one qualitative study (see Appendix A, Table A2). As ten articles is a limiting factor in the literature review, and to keep the quality of evidence as substantial as possible, a majority of quantitative articles were chosen. The qualitative study was chosen due to the importance of understanding what patients think and how they feel bout technology implemented in their health care, what barriers they experience, and what encouraged them to either succumb to or overcome those barriers to improve their health. The combination of quantitative and qualitative articles yields a well-rounded expertise in developing audiovisual education for patients with chronic disease (See appendix A, table B).

Forty percent of the studies were completed in the US, and sixty percent were completed in international countries. The international studies are relevant because they demonstrate that audiovisual chronic disease education is relevant to all patients in various cultures, demographics, and social settings when provided in the patient's primary language. All studies pertained to the adult population> 18 years old, with one focusing on adults > 40 years old and another on adults > 60 years old, all with either a chronic disease or diabetes. Demographics were highly variable between studies, representing diverse patient populations and cultures. The studies varied from inpatient and outpatient settings, with two containing both an inpatient and outpatient component. Most studies took place in large metropolitan cities. The audiovisual or technological intervention was frequently compared with in-person individual or group education. Follow-up ranged from weeks to months, with one study conducted over 12 months. The evaluation tools were heterogenous between studies. One study was included for its year follow-up of patients hospitalized with diabetes and subsequently developed a wound, an amputation, or death, over 12 months in both inpatient and outpatient settings (Schechter et al., 2020).

Discussion

Audiovisual education is the natural progression of disseminating core information to patients to increase SEB. Patients need education in their primary language to give them the tools to increase their SEB. Repeatable viewing, photos, pictographs, and pictures can all lead to convincing a person of the need for intervention, recalling information, and being convinced to engage in SEB to keep their health on the continuum of fewer disease complications and sequelae. Digital education is effective in stirring a desire and motivation to overcome barriers to treating a wound or recognizing signs and symptoms of infection. While technology and

audiovisual media come with their own set of barriers to implementation, the benefits of reaching a broader patient population, repeatability of the education for extended learning, and transferability and reusability are benefits that bear the need for creation and practice implementation. Smartphones are readily accessible and free internet access is available throughout communities at local shops, libraries, and public places of gathering.

Implications for Practice Change

Digital media can easily be shared from person to person and via various platforms, including personal smartphones (Lor et al., 2020; Kim et al, 2023; Navarro et al., 2021). Therefore, patients and their caregivers or family member can receive the same consistent education that was provided in clinic after an appointment, as often as necessary. The consistency of audiovisual education can improve patient SEB by providing additional resources to overcome barriers that would prevent reaching SEB potential (Paragas & Barcelo, 2019; Lor & Backonja, 2019; Jain et al., 2020; Molavynejad et al., 2022; Kim et al, 2023). Stakeholders include the nurses, wound care provider, ancillary clinic staff, and the practice medical director. The plan is to implement audiovisual education to increase self-efficacy in identifying wounds or caring for a wound in any patient with diabetes. Showing patients with DFU validated evidence-based videos of diabetic foot wound care will give them the tools to increase SEB (Abrar et al., 2020; Navarro et al., 2021). The video demonstrates how to perform primary wound care, the signs and symptoms of infection, and what to report or ask a healthcare provider. Implementing the video as part of standard education for patients with DFU will benefit the organization as patients most often present with DFU in the wound clinic. Additionally, patients with diabetes will benefit from DFU care skills and knowledge to prevent wounds from occurring, reducing pain, suffering, potential loss of limb or livelihood for the individual (Schechter et al., 2020).

Patients with high SEB could potentially decrease the cost of healthcare for the clinic, the local hospitals, and the state healthcare system overall. Audiovisual media could also be beneficial to show patients with diabetes who visit the primary care clinic how to perform self-foot assessments, why wearing shoes is essential, daily foot cleaning, how the beginnings of a wound may appear, and what signs and symptoms to report to providers to increase SEB at DM diagnosis and prevent DFU from developing. Initial data to collect include qualitative and quantitative data regarding current state of patient SEB and wound care skills, and perceived barriers to SEB. Possible outcomes to be measured include changes in SEB, changes in perceived barriers to SEB, and possible comparison of wound healing, exacerbation, or complication at the end of the intervention cycle.

Theoretical Framework

The Health Belief Model (see Appendix B, Figure B1) is a basic framework for change that highlights what an individual must understand and believe before being willing to act and make a change. The model was first developed in the 1950s by Rosenstock and Hochbaum, with further development into the 1970s, demonstrating that what people believe about their health conditions directly affects their actions or inactions regarding their health status (Conner & Norman, 2005). This model is particularly applicable to educational interventions directed toward individual health beliefs that assist patients in identifying their personal threat perception, measuring their perceived self-efficacy, and evaluating what behaviors a patient will enact to counter a perceived threat.

According to the model, cues to action influence patient actions, specifically their behaviors that address the perceived threat. Cues to action include viewing media, advice from individuals, whether family, friends, or professionals, personal influences, and the internet

(Edible Psychology, 2021). While every individual has perceptions of their susceptibility or risk of disease development, the perceived severity of the situation, and the perceived benefits of treatment, everyone will experience barriers that differ from one adult to the next. The adult patient must identify and address perceived beliefs before moving into acting.

Primary identified barriers for the clinic population include lack of access to transportation, medical access, and resources (U.S. Department of Health and Human Services, 2021). Once barriers are addressed, cues to action promote action in individuals. When barriers are not addressed, even individuals who understand their susceptibility and potential severity, who believe in the benefits of lifestyle changes of eating healthy and exercising, will be stuck without change.

Patients who present with DFU at the wound clinic have some perception of disease susceptibility and are seeking cues to act and treat their DFU. The Health Belief Model drove the project development of providing accessible on-demand audiovisual education in a patient's primary language as the cue to action that helps adults overcome their perceived and actual barriers to engage in effective SEB when caring for their DFU to increase patient-perceived self-efficacy.

Implementation Framework

The Plan, Do, Study, Act model (PDSA) is an adaptable model to guide the implementation of a project, analyze the results, and then further determine in additional intervention is needed in the plan or do phase or if the intervention is suitable for rollout (see Appendix B, Figure B2). It is effective for a short duration and a small sample size (AHRQ, n.d.). The planning stage involves identifying a problem, issue, or gap that requires intervention. Once a problem has been identified, the planning begins of a possible intervention to solve the

issue, looking at the current process and developing an improvement theory. In the do phase, the theory is tested for improvement from current practice. Then, the results of the tested theory are analyzed for further improvement or rollout. Finally, the act phase indicates improvement; another PDSA phase begins, or the intervention is implemented into current practice.

This project is the second round of a previous PDSA cycle, where an audiovisual DFU educational video was created by a previous doctoral nursing practice scholar's project. This DFU education was provided to patients with DFU in either English or Spanish. Self-efficacy was measured using the venous leg ulcer self-efficacy tool (VeLUSET©) domain self-efficacy tool developing expertise pre- and post-intervention (see Appendix C) to determine if the patient's confidence level in SEB changes. The goal of the intervention was to increase patient SEB. Permission to use and adapt the tool was obtained from the author Brown et al., (2013).

Methods

Setting and Stakeholders

The project site was a not-for-profit free medical clinic in the southwestern US that uses volunteer provider hours to provide critical access to primary and specialty medical services to the poor and uninsured, with paid ancillary and administrative staff. The clinic's role in reaching multiple underserved homeless, uninsured patients is pivotal in providing medical care to the poor and needy. The clinic's goal is to stabilize patients' chronic conditions or give them a home post-hospital discharge for a safe transition of care back into the community.

There were numerous stakeholders in this project. The clinic director was on board with the project intervention as wound care is costly, and DFUs are a common problem in the population served. The wound and podiatry clinics have limited provider availability, with the appointment schedules fully booked. The wound care practitioner and the registered nurses in the

wound clinic were eager for an intervention that provided consistent evidenced-based education in the patient's primary language that would also increase the patient's SEB and could be delegated to ancillary staff as necessary without compromise to the quality of the education. The ancillary staff, including medical assistants and interpreters, were able to allocate their language skills and time resources to others who needed them, as the education was provided in Spanish and English. The participants with DFU received education to increase their confidence in their skills to care for their ulcers.

Participants and Recruitment

Adult patients and their caregivers were recruited for the project. Participants were required to meet both inclusion and exclusion criteria. Inclusion criteria for this project was subjects must be > 18 years old, able to speak English or Spanish fluently, have diabetes, be current patients at the clinic site, and have a DFU, or be a caregiver >18 years of age and speak either English or Spanish for someone who met the criteria. These criteria identified subjects who could consent for themselves, received the intervention in a language they understood, and had the problem of interest. Exclusion criteria was any cognitive impairment that prevented participants from providing informed consent. This criterion ensured patients who could not consent for themselves were not unduly burdened with the request for participation, could not fully participate, or receive any benefit from the intervention, including affecting their quality of life.

Recruitment occurred using a flyer posted at the clinic in English and Spanish in-person recruitment for wound and podiatry patients while they were in the waiting room at the clinic. Consent was obtained verbally, in a private room at the clinic in their language of choice. Prospective participants were be given a written copy of the consent form. Participants were

instructed that their participation was voluntary, they could choose to discontinue at any time, and their choice not to participate would not affect their ability to receive or the quality of care they received at the clinic.

Project Design

The QI project sought to answer the following evaluation question: Did patient confidence in SEB increase after engaging in the AE intervention? The intervention centered around providing adults with DFU an audiovisual intervention containing education on primary wound care related explicitly to DFU (see Appendix C). The VeLUSET© domain *developing expertise* was adapted and used to evaluate patient confidence pre- and post-AE intervention. The timeline for project approval, recruitment, implementation, and data collection occurred over eight months, from August 2023 to March 2024 (see Appendix D).

Internal Review Board

Recruitment began after internal review board (IRB) approval from the university was obtained. The site did not require additional internal IRB approval. The project was submitted to Arizona State University's IRB social and behavioral protocol on August 29th, 2023. Changes to the protocol were made according to IRB recommendations. The IRB protocol, English materials, video, and tools were approved on September 12, 2023. Submission for a Spanish translation certificate was submitted on October 1, 2023. Spanish translation certification approval was received on October 2, 2023, for all materials, video, and tools (see Appendix E).

Recruitment and Consent

Recruitment and consent began on September 26th, 2023, in English. Spanish recruitment and consent began on October 3rd, 2023 (see Appendix F). A flyer promoting the was given to prospective participants. A target number of ten participants that met the inclusion and exclusion

criteria is the minimum desired sample between the wound and podiatry clinics. Consent occurred at an already scheduled appointment, immediately prior to the first session (see Appendix G). Recruitment ended March 1st, 2024.

Methods

From September 2023 to March 2024, the intervention encompassed three participant visits over three to six weeks. At the first visit, participants were administered the printed paper six-question adapted VeLUSET© domain tool *Developing Expertise* in either English or Spanish measured with 11-point Likert scale. A Spanish interpreter was available in person to allow for clarification of any items on the scale. Telephonic Language Line interpretation was used if no in-person interpreters were available.

After completion of the tool, the participants were shown the AE in their preferred language, either English or Spanish, on an electronic tablet in their clinic room or another private area. The participants were given an infographic with a quick response (QR) code to access the AE anytime between appointments (see Appendix H). Data was collected for how often the QR code was used to access the AE during the project but did not link to specific users. Participants were shown the AE on an electronic tablet at the second visit. Any questions participants had directly related to their specific orders were addressed by the clinic's nursing team.

At the third visit, patients were given the same printed paper six-question adapted VeLUSET© domain tool *Developing Expertise* in the language they chose initially to complete (see Appendix H). After completion, a five-question survey assessing the participant's opinion of the AE was administered (see Appendix H). Barriers to the implementation included lack of participants that met inclusion criteria, and lack of willing participants. The cost of the project implementation was $230 (see Appendix I).

Data Collection

Demographic data collection included age, gender, language preference, race/ethnicity, and visit type. Completed demographic forms were kept from the time of collection in a lock box until all data was entered electronically into the software program, approximately December 2023. Participant data was deidentified and only identifiable by subject ID when entered the software program. Paper forms were shredded and disposed of in healthcare-compliant waste receptacles. Data was stored in the software program until May 2024, after project completion. Once the project had been completed and the results had been analyzed and presented, data was deleted from the software program. Descriptive statistics were used to analyze demographic data using Intellectus software.

Instruments

The intervention was measured using the adapted VeLUSET© domain *developing expertise*. The VeLUSET© tool measuring self-efficacy of chronic conditions was created and validated by Brown et al., 2013. It is appropriate for use to evaluate a SEB outcome due to its validation and transferability to assess patient SEB pre- and post-intervention as it pertains to ulcer management. Permission was obtained from the author to use the tool to evaluate diabetic foot ulcers and use the domain *developing expertise.*

VeLUSET© Tool Description

The *developing expertise* domain is a six-question survey asking patients to rate their current confidence level regarding managing the care of their ulcer. The statements include remaining positive the ulcer will heal even when it comes back, confidence level of asking questions if something is not understood regarding treatment, confidence of personal knowledge why the patient has an ulcer, confidence in the ability to recognize signs ulcer is returning,

confidence in deciphering if incorrect information is given, and confidence in knowledge of where to go if ulcer returns. The responses are on an 11-point Likert scale, ranging from completely disagree, moderately agree to completely agree. Respondents are requested to answer each question by choosing a number for each statement. The lowest SEB score possible is 0, and the highest is 60. The tool was used for pre-and post-evaluation after an intervention.

Psychometric Validation

Brown et al. (2013) validated the VeLUSET© with an *n*= 20 using factor loading and Cronbach's alpha. The Cronbach's Alpha scores with an overall α of 0.931 for the total scale and the subscales (α = 0.834, 0.851, 0.753, 0.828, and 0.804) are reasonable for a newly developed tool. The tests used to validate contribute to the reliability and validity of the tool.

Outcome Measures and Measurement

Self-efficacy directly relates to the theoretical framework change that highlights what an individual must understand and believe before being willing to act and make a change. The project outcome measurement was patient SEB and whether there was an increase, no change, or decrease in SEB post-intervention and materials review. Increasing the individual's SEB gives them the tools to act to make positive changes and become active participants in their health continuum.

Data Analysis Plan

Using the domain-developing expertise developed initially by Brown et al. (2013) was an exploratory approach to evaluating SEB related to DFU. As only one domain from the VeLUSET© tool was adapted and utilized for this project, descriptive statistics were used to perform data analysis to measure high and low mean, standard deviation, and range. The outcomes compared pre-intervention to post-intervention mean average scores and report any

increase or decrease in these values to stakeholders to determine the QI project intervention value to the site.

Ethical Considerations

Three ethical principles that guided the development and implementation of this project were respect for persons, beneficence, and justice. Respect for persons is the principle that participants should understand what they agree to, the risks, benefits, and their right to ask questions, refuse or withdraw from the study or project (U.S. Department of Health and Human Services [USDHHS], 2018). The project adhered to this principle by obtaining verbal informed consent for participants in their language of choice, either English or Spanish. The project was explained to the participant, participants were allowed to ask clarifying questions, and they were informed that their participation is voluntary. They were told that their consent to participate could be withdrawn anytime. They were informed that their choice to refrain from participating would not affect their access to or quality of care at the clinic or specialty clinics at the site.

Beneficence incorporates the actions to do no harm to patients and to maximize the benefit they may receive from the project intervention (USDHHS, 2018). The project adhered to this principle by using evidenced-based education validated by providers in English and Spanish. The time participants spent on the intervention was maximized during periods of waiting that naturally occurred during the flow of the clinic appointment. Justice is the final principle guiding the development and implementation of this project, which evaluates how the intervention is distributed and who is deserving of the intervention (USDHHS, 2018).

The project adhered to the principle of justice by offering the intervention to all adults who meet the inclusion criteria with the opportunity to participate. The inclusion criteria were designed to allow the maximum number of participants at the specialty clinic while protecting

those who could not provide informed consent. Faculty mentors and the IRB reviewed the project's methodology, updated, and revised the written protocol to uphold the highest possible ethical practice and participant protection standards.

Results

Outcomes

Project recruitment occurred from September 2023 to March 2024. Of seven total potential participants between the wound and podiatry clinics at the project site, six agreed to participate, and one declined to participate. One participant was lost to attrition due to obtaining medical insurance and no longer following up at the wound clinic. Five participants completed the project.

Descriptive statistics were used to describe the sample and outcome variables. Inferential statistics was used to analyze the survey results, using a two-tailed t test, with a critical p value $\leq$ 0.05. The project used Intellectus Statistics™ to store, analyze, and manage the data. The average age of the sample was 46 (SD = 10.21). Age ranged from 32-62 years of age (see Appendix J Table 1). The gender of the sample was 50% female and 50% male. Most of the participants chose Spanish as their primary language (n= 4). Two participants chose English as their primary language (see Appendix J, Table 2). The pre-survey mean score was 56 (SD = 4.55) and the post survey mean score was 58.5 (SD = 1.73), (see Appendix J Figure 1). The t value was $t(3)$ = -1.61. The p value was statistically insignificant p= *.206,* indicating the mean scores of the pre- and post-surveys are not significantly different from the other. The Cohen's d was d = 0.80, indicating a strong effect size (see Appendix J, Table 3).

The clinical significance of the results showed improvement in patient and caregiver perception of their ability to perform basic wound care. This intervention not only filled empty

clinic time when staff left the room to gather wound care supplies, but also allowed the nursing staff to both verbally educate and demonstrate individual wound care techniques just shown on the video. This solidified the education for the patients.

Impact of Project

Patient reported impact of the project intervention was positive, with patient requests for assistance in accessing the video at home. The total viewing of the videos linked to the QR code during the project course were fourteen times for the English video and twelve times for the Spanish video at the time of this writing. Patient reported qualitative statements post participation completion included themes such as "*This is good education that we need."* and "*I want my caregiver to watch this video.".* These statements indicate an increase in patient and caregiver perceived and reported self-efficacy. The project intervention enhances the communication between patients, providers and nurses in the clinic setting. The use of the AV intervention fills the gap identified of the need for patients to have consistent, reliable, validated wound care education during their visits to perform wound care at home. Patients and caregivers now have access education for wound care once they leave the clinic, positively impacting the healthcare system. The education can consistently be provided in the patient's or caregiver's primary language, creating a better system for delivering wound care to this population.

Sustainability

Project sustainability is feasible and planned to continue at the project site for all patients who present with DFU. Both the wound care provider and the current nursing staff were trained to implement the video prior to wound care demonstration techniques during a patient's first and second visits to the clinic. The intervention is easily transferable and could be used in both the primary care setting and the specialty wound clinic setting at any location. No specialty

healthcare training is required to understand the AE and the QR code is easily transferable to any electronic device with internet access. The site champion gave verbal statements of support to continue to use the video resource. The videos on USB flash drive, electronic tablet, and infographic materials were provided to the clinic at the completion of the project.

Discussion

Summary of Findings

Participants received AE congruent to the education and skills practice they received post project intervention. Initial demographic data from the clinic indicated a need for consistent education for both patients and their caregivers to view not only at the clinic, but also at home. Project results indicate that although it is not statistically significant, the project had a positive impact on patient and caregiver perception of SEB regarding wound care techniques.

Strengths

The project has several strengths that contribute to its shareability and efficacy. The consistent, reliable, and repeatability of the AE can be easily shared with patients, caregivers, and other facilities with little to no cost, as the requirements to view the AE include internet access and an electronic device that are very common items in this current time. The infographic and the AE are available in both the English and Spanish languages, which reaches a large demographic in the US.

Limitations

Limitations to the project include small sample size and low clinic volumes for recruitment over the project implementation period. Further limitations include the use of a subjective rating scale to evaluate pre and post self-efficacy statements, rather than fill in the blank or multiple-choice responses that would provide an objective measurement of change in

self efficacy. The need for interpretation of all conversations with participants who chose Spanish as their primary language had the potential to contribute to misunderstandings. Additionally, though documents were in the participants preferred language, potential for misunderstanding of the rating scale may have contributed to such high pre-survey self-efficacy scores.

Recommendations

The audiovisual format of education with demonstrated techniques is beneficial to comprehension of new skills for patients. Further evaluation of the methods, techniques, and resources are necessary to improve DFU education for patients. Using an objective measurement of patient understanding and confidence may improve evaluation scores.

Conclusion

Diabetes and its sequelae are a national problem that healthcare providers do not take lightly. While the primary goal is focused on prevention and management of DM, interventions must be developed and implemented to address the DFU that develop before they progress into a systemic infection, require an amputation, or contribute to a patient's death. Interventions to increase patient and caregiver's SEB can positively impact their knowledge of how to care for the DFU, their skills of how to care for the DFU, and their ability to seek intervention early by recognizing the signs and symptoms of an infected DFU. Audiovisual education interventions help to fill this gap and can provide clinical significance in increasing patient and caregiver SEB.

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Appendix A

Evaluation and Synthesis Tables

Table A1

Evaluation Table for Quantitative Studies

Citation	Theoretical/ Conceptual Framework	Design/ Method/ Purpose	Sample/Setting	Variables	Measurement/ Instrumentation	Data Analysis	Results/ Findings	Level of Evidence; Application to practice. Generalization
1.Paragas et al., (2019). Effects of message-framed informational videos on diabetes management knowledge and self-efficacy. **Country**: Philippines **Funding**: Not stated, no conflict of	Inferred- Self-Efficacy Theory	**Design:** Quasi-experimental study using pretest and post test **Purpose:** To evaluate how positive or negative messages effect the DMK and SE in patients with T2DM.	**N= 165** **Demographics:** Filipino nationality, ≥ 18y, live in Manila City, T2DM, speak, read, write either English or Filipino, oriented person, place, time, **Setting:** Two DM specialty clinics in Manila, Philippines. **Exclusion:** no psych disorders, cognitive	**IV1:** T2DM message framed video education **DV1:** DMK **DV2:** SE **Definitions:** Gain framed: positive outcomes Loss Framed: negative outcomes.	**Tools:** Diabetes Management Self-Efficacy Scale Author developed T2DM baseline knowledge assessment. Pre and posttests. **Validity/Reliability:** Both tools were tested with 38 participants with T2DM that did not participate in study.	**Statistical Tests Used:** ANOVA X^2 test Descriptive statistics LOS p <0.5 95% CI	DV1: ATKADS SMD 0.52 F-DMSES SMD 0.35 DV2: ATKADS SMD 1.13 F-DMSES SMD 1.56 Both video intervention groups showed increased SCB	**Level of Evidence**: Level 3, CCS **Strengths**: Video education effective, positive outcome education more effective than negative outcome education. Effective for Filipino nationality. **Weakness**: Not randomized, clinic based. Could skew the ability for the results to be

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interest disclosed. **Bias**: None			disorders, or physical limitations. 11 excluded; 7 did not meet criteria, 4 declined to participate. **Attrition:** Gain framed group: 0 Loss framed group: 0 Lecture type: 0		No changes were made. Validity was acknowledged by an endocrinologist, med-surg Professor, and RN diabetes mellitus educator. Author validated by Rasch analysis, reliability 0.87 and item separation of 2.56. Internal consistency acquired Cronbach's alpha of 0.94 IBM SPSS (Statistics software)		compared to lecture group.	disseminated to other clinics. **Feasibility**: The results appear reasonably feasible to implement in clinic settings both individual, group, or in waiting rooms. **Application**: This study could be tested in other demographics, nationalities, and races. Could be facilitated to waiting rooms, self-study, and review. Easily disseminated to multiple digital platforms.
2. Schechter et al, (2020). Evaluation of a comprehensive diabetic foot	Inferred, PDSA	**Design:** Retrospective Cohort study **Purpose:**	**N=** 323 **Demographics:** Hospitalized patients, large	**IV1:** IP Care model	**Tools:** Care metrics created from national societal guidelines and CMS	**Statistical Tests Used:** Chi Square Fisher's Exact	12 month follow up: DV1: 14 died.	**Level of Evidence**: Level 4, CCS **Strengths**: Large African American

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ulcer care quality model. **Country**: USA **Funding:** Emory Medical Care Foundation; Atlanta Clinical and Translational Science Institute; GEU grants form National Institutes of Health National Center for Advancing Translational Sciences; National Institutes of Health; National Center for Research Resources **Bias:** none		Evaluate care model to prevent DFU from progressing to amputation	African American population. ICD 10 code identifying DFU, heart failure status, CKD status. Initial hospitalization in 2016. **Setting:** Grady Memorial Hospital, patients admitted from Jan 1-Dec 31, 2016 **Exclusion:** Initial hospitalization prior 12 months form Jan 1, 2015, to December 31, 2015. **Attrition:** 14, death	IV2: OP care model **DV1:** Major amputation, **DV2:** Minor amputation **DV3:** Osteomyelitis no amputation **DV4:** Ulcer without osteomyelitis or amputation **Definitions:** Major amputation: Above ankle Minor amputation: below ankle **IP:** glycemic control $\leq$ 180; HbA1c $\leq$ 90 days post d/c;	quality measurements for interventions**.** **Validity/ Reliability:** Reputable guideline sources including ADA, Vascular Surgery Society, and Infectious disease society. CMS recommendations require documentation for reimbursement.	Wilcox Rank-Sum R version 3.6.1 (statistical software) P values $\leq$ 0.5 significant.	DV2: no deaths, 15 had major amputation. DV3: 12 died, 17 had major amputation. DV4: grouped in with DV 3 Overall amputation-free 12-month survival: 71% Death or further amputation: 29%.	population, detailed care model, 12 months of post hospitalization follow up. Few lost to attrition. Large sample size. Included heart failure and CKD data. **Weakness**: No information regarding peripheral artery disease, hypertension, lipid control ect. Single hospital. Difficult to generalize to other patient populations without DFU. **Feasibility**: model based on guidelines and should be included in all DFU care. Multiple grants needed for study. The cost to implement the

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				DM ed prior to d/c. **OP:** wound care ≤ 30 days post d/c, ≥ 2 provider visits 90 days apart.				model and tick the boxes of components for the care model for all patients with DFU would be high. **Application**: 37% of IP received wound care, and 33% OP received wound care post discharge. This demonstrates a large gap in both education and wound care that needs to be met. An intervention that teaches both education and wound care would benefits patients with DFU, and potentially lead to decreased DFU and amputations.

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3. Kim et al., (2023). Cognitive function and self-management behaviors in older adults with type 2 diabetes **Country**: USA **Funding**: University of Illinois Chicago Midwest Roybal Center for Health Promotion and translation and Basic Science Research Program through the National Research Foundation of Korea, funded by the Ministry of Education.	Inferred, Self-efficacy theory	**Design:** Observational cohort design **Purpose:** Investigate the effect of executive function or subjective cognitive function in older adults with T2DM on daily self-management behaviors including diet, glucose management, activity, and provider follow-up. **Method:** Telephone administered cognitive exams, and online surveys.	**N= 84** **Demographics:** 60-year-old adults with T2DM for at least one year, internet access, fluent in English. **Setting:** Midwest, USA. Conducted via online survey and telephonic encounters due to covid pandemic. **Exclusion:** Current diagnosis of Alzheimer's, Parkinson's, dementia, brain trauma or injury, multiple sclerosis, severe mental illness, schizophrenia and bipolar. No	**IV1:** Cognitive function **DV1: Independent T2DM self-management** **Definitions:**	**Tools:** mini MOCa OTM-T, DSMQ-R, PROMIS **Validity/ Reliability:** diabetes self-management scale, patient reported outcomes measurement. Mini MOCA reliability .72 Oral trail making test r= .46	**Statistical Tests Used:** Bivariate correlation, backwards stepwise regression.	DV1: Cognitive function has a mild effect on self-management behaviors. Mini-MoCA negatively correlated with physical behavior (r=-.27, p=.012) O-TMT part B longer time to complete (r= -.24, p= .026) and a greater number of errors made 9r =-.26, p=.018) correlate to low DSMQ-R physician contact scores.	**Level of Evidence**: Level 4, cross sectional, observational cohort **Strengths**: Cognitive function tests performed to correlate to self-care practice and maintenance of T2DM. **Weakness**: Conducted during covid, so testing was carried out over the telephone. Some tests are not fully validated over the phone. A larger sample size might yield different results. **Feasibility**: Most people have telephones they can operate better than

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Bias: None			internet access, hearing impaired. **Attrition:** 2, lost contact.				No correlation of PROMIS scores with DSMQ-R scores. Higher Mini-MoCA scores associated with poorer physical activity subscale scores (B =-1.83, p=.038). O-TMT part B explained 35% variance of DSMQ-R physician contact scores (p=.004), where greater number or errors was associated with poor physician	new digital appliances and equipment. **Application**: assessment of patient's cognitive ability can be done over the phone. Cognitive function has the effect on self-care management of T2DM.

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							contact behaviors (B= -0.34, p= .027).	
4. Lor et al., (2020). Visualizations integrated into consumer health technologies support self-management of chronic diseases: A systematic review. **Country:** US **Funding:** None listed. **Bias:** None	Inferred: Stages of Change Model	**Design:** Systematic Review **Purpose:** To evaluate visual data and information integrated into chronic disease management of common diseased including CKD, T2DM, type 1 diabetes mellitus, human immunodeficiency virus, and irritable bowel disease.	**N:** 6 studies **Demographics:** Sample sizes-4-154 Countries-UK, US, Japan Diseases-CKD, T2DM, type 1 diabetes mellitus, human immunodeficiency virus, and irritable bowel disease. **Setting:** Communities of UK, US and Japan. Access to smart devices and technology	**IV:** Brief automated messages **DV1:** SCB **DV2:** Subjective experiences using visualizations. **Definitions:** N/A	**Tools:** MMAT, GENIE, visual maps, informational and data visualizations **Validity/Reliability:** Each author in the study evaluated every study's MMAT score to ensure accuracy, health informationist used to assist with accuracy of search terms	**Statistical Tools Used:** PRISMA	**DV1:** The studies showed increased SCB with use of visual aids for chronic disease education. **DV2:** Subjective had positive experiences using visualizations throughout all studies included in review. **Themes:** Graphs were the most used	**Level of Evidence:** 1, systematic review **Strengths:** **B**ackground demonstrated effectiveness of audiovisual interventions for chronic disease management. **Weaknesses:** sample size n=6, focused on studies that used visualization interventions only **Feasibility:** Larger study population needed to lend to feasibility in real world application.

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			Exclusion: Studies were not empirical, participants did not have a chronic disease, not full text, not in community setting, not written in English **Attrition:** N/A				visualization in the studies	**Generalizability:** Majority of participants in studies were White and highly educated, studies need to be reviewed that have a more diverse group of participants for the results of this study to be generalizable.
5. Abrar et al., (2020). Development and evaluation educational videos of diabetic foot care in traditional languages to enhance knowledge of patients diagnosed with diabetes and risk	Inferred Health Belief Model	**Design:** Cross-Sectional **Purpose:** Develop an educational video in the traditional language to increase knowledge of diabetic foot care	**N:** 40 **Demographics:** All participants with T2DM over 40 years old. No history of amputations or DFU **Setting:** Public Health Center **Exclusion:** If participants did	**IV:** Educational Videos **DV1:** Foot care knowledge **Definitions:** Video content included, proper foot washing, inspection, toenail trimming, and	**Tools:** Educational video, Pre/Post tests **Validity/Reliability:** Questions were decided on using a panel of experts in wound care and education, a 4-point Likert scale was given to the experts to obtain relevant questions for questionnaire, Delphi method for video validity	**Statistical Tools Used:** Mean Standard Deviation	**DV1:** Foot care knowledge increased after videos p=0.001	**Level of Evidence:** 4 **Strengths:** Patient s who had not yet developed DFU. Education and questionnaire valid and accurate prior to dissemination. **Weaknesses:** Only done in languages native to Indonesia. **Feasibility:** short videos and important

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for diabetic foot ulcers. **Country:** Indonesia **Funding:** None **Bias:** None			not meet above demographics **Attrition:** 0	appropriate socks.				information viewed first increase retention. Primary language increased retention. **Generalizability:** across Indonesia highly generalizable. Need interpretation to disseminate outside of Indonesia.
6. Molavynejad, et al., (2022), A randomized trial of comparing video telecare education vs. in person-education on dietary regimen compliance in patients with type 2 diabetes mellitus: A support for clinical telehealth providers.	Inferred, Self-efficacy theory	**Design: RCT** **Purpose:** To compare the effects of face-to-face education versus video telecare education on dietary regimen compliance in patients with T2DM for supporting the diabetes care and telehealth providers.	**N=** 378 Control: n=126 Video education n= 126 In person education n=125 **Demographics:** T2DM for 1 year, ≥ 18y. **Setting:** Outpatient setting, patients needed to come in for	Delivered in both Farsi and Arabic, over 3 months. **IV1:** Video tele-education **IV2:** In person education **IV3**: Staff RN pamphlet education (control) then choice of in person or	**Tools:** None. Education developed by an endocrinologist and nurses. **Validity/ Reliability:** Validated by health care professionals.	**Statistical Tests Used:** one way ANOVA, least significant difference post-hoc test, paired t test.	**DV1:** SCB weight pretest p= 0.178 SCB weight posttest p= 0.129 **DV2:** glycemic parameter pretest p= 0.453 glycemic parameter posttest p= 0.001	**Level of Evidence**: 2 **Strengths**: Compared in person, video, and combination instruction. Videos provided education in another language and patients preferred primary language. **Weakness**:

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Country: Iran **Funding**: Ahvaz Jundishapur university of medical sciences. **Bias**: none			education in all groups. In person group education setting in a conference room in person. Video education in person in a group conference room for initial education, then via DVD or cell phone for home use. test messages were sent as reminder s to review the education. **Exclusion:** No other chronic disease, no official self-care prior to study, not pregnant or breastfeeding. Missed one educational	video education. **DV1**: SCB **Definitions:** SCB-management of weight, glycemic parameters, and lipid profile dietary regimen compliance.			**DV3:** lipid profile pretest p= 0.148 lipid profile posttest p=0.033	Single center. Short study over 3 months. Follow up for home education group difficult. Farsi and Arabic languages merged. **Feasibility**: Realistic and economical to implement in the outpatient clinic setting. **Application**: Video education is effective and more accessible and convenient for patients with busy lives. It is an economical standardized method of instruction that is available for patients and their caregivers.

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			setting, no longer interested, or changed therapeutic regimen. **Attrition:** Control: 6 Video education: 3 In person education n= 4					
7. Kim et al., (2019). Effectiveness of a social media–based, health literacy–sensitive diabetes self-management intervention: A randomized controlled trial.	Inferred, Self-efficacy theory; social cognitive theory	**Design:** RCT, 3x2 SM-HL, TEL-HL, UC **Purpose:** To compare if SM-HL DM interventions were more effective than TEL-HL or UC	**N=** 151 **Demographics:** Adults, with T2DM **Setting:** Inpatient hospital setting of two different hospitals, endocrinology wards. **Exclusion:** Could not speak Korean, no smartphone, no	**IV1:** virtual T2DM education **DV1:** hemoglobin A1c **DV2:** Patient activation **DV3:** SCB **Definitions:** Patient activation-	**Tools:** Patient activation measure 13- Korean. summary of diabetes self-care activities, Korean functional health literacy test 9-week and 12-week f/u **Validity/ Reliability:** Rasch analysis and factor analysis determined	**Statistical Tests Used:** Bivariate and logistical linear regression	**DV1:** Hgb A1c 9-week f/u p= .193 12-week f/u p=.139 **DV2:** PA p=0.03, no significant differences from 9-week to 12-week f/u	**Level of Evidence**: 2 **Strengths**: Showed that health literacy was less of a factor when audio and visual education was given. High level of evidence. **Weakness**: Done in Korea, unsure of generalizability, TEL-HL had better outcomes than SM-

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Country: South Korea **Funding**: Ministry of science, and future planning. **Bias**: None			diagnosis of T2DM **Attrition:** 31 from 9-week assessment to 12-week assessment	how much a patient knows about managing T2DM independently.	validity and reliability Cronbach's alpha coefficient was 0.77 for summary of diabetes self-care activities.		**DV3:** SCB TEL-HL p=0.64, no significant difference found between SM-HL and UC groups	HL which was unexpected, high attrition rate **Feasibility**: Very feasible to reproduce because of easy access to technology **Application**: Showed that SM-HL can be used as an adjunct to UC in clinical setting
8. McNab, et al., (2019). Why video health education messages should be considered for all dental waiting rooms. **Country**: US **Funding**: None **Bias**: None	Inferred: Health Behavior Model	**Design:** Cohort Study **Purpose:** To discover if patients prefer video oral health education and if it effects health behaviors	**N= 236** **Demographics:** Adults > 18y, able to sign consent, waiting for a dental procedure. **Setting:** Dental waiting rooms **Exclusion:** younger than 18 years	**IV1:** Oral health behaviors video **DV1:** SCB **DV2:** Patient preference **Definitions:** Oral health behaviors video displayed on	**Tools:** Oral health behaviors Pretest and posttest. **Validity/ Reliability:** Reviewed by oral health professionals in several clinics to confirm reliability and validity of questions.	**Statistical Tests Used:** Descriptive analysis Fisher's Exact Wilcoxon signed rank test.	**DV1:** 97.9 % of patients who watched OHE video preferred it p=<0.02 **DV2:** 45.3% of participants reported increased SCB at f/u survey. p=<0.001	**Level of Evidence**: 4 **Strengths**: Large initial group survey participation, analysis of passive education benefits and effect of educations along with patient preference. **Weakness**:

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			Attrition: 136 Lost to follow up.	TV in dental waiting rooms.				Most patients were lost to attrition, over 50%. 100 remained for posttest analysis. **Feasibility**: Highly feasible for intervention. TVs in waiting rooms relatively inexpensive and easy to implement. **Application**: Applicable to multiple healthcare settings and topics due to the nature most patients waiting in a room prior to appointments.
9. Navarro et al., (2021). Empowering patients living with chronic conditions using video as an	Inferred, Self-efficacy theory	**Design:** Systematic review **Purpose:** To discover if chronic disease self-care videos are effective	**N=** 12 studies **Demographics:** 5 QE, 2 RCT, 5 observational Chronic disease management,	**IV1:** Electronic health education, recorded or virtual.	**Tools:** Digital education, telehealth visits, DVD education. **Validity/ Reliability:**	**Statistical Tests Used: N/A**	**DV1:** SCB increased in all 12 studies. **DV2:** Management of chronic disease	**Level of Evidence**: 1 **Strengths**: The studies used various videos and

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educational tool: Scoping review. **Country**: Spain **Funding**: Universidad San Vicente Martir **Bias**: None			chronic obstructive pulmonary disease, Heart failure, pain, T2DM, Human papilloma virus **Setting:** Various healthcare setting **Exclusion:** Duplicate studies Studies not pertaining to topic of chronic conditions. No studies with public videos **Attrition:** N/A	**DV1:** SCB **DV2:** Chronic disease management **Definitions:** None	Downs and black checklist for quality assessment		improved in all 12 studies.	techniques to administer videos, with various CDM so it could show good generalizability across conditions. **Weakness**: Appears to be a small study size, more studies need to be done to confirm generalizability **Feasibility**: Increasing d/t to increased access to technology. **Application**: Digital methods of educational instruction have a place in modern medicine and can make education and reinforcement accessible to patients in many locations

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								across varied platforms.

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Table A2
Evaluation Table for Qualitative Studies

Citation	**Theory/ Conceptual Framework**	**Design/ Method/ Sampling**	**Sample/ Setting**	**Major Themes Studied/ Definitions**	**Measurement/ Instrumentation**	**Data Analysis**	**Findings/ Themes**	**Level/ Quality of Evidence; Decision for/ Application to practice. Generalization**
10 .Jain et al., (2020), Patients and healthcare professionals' perspectives towards technology-assisted diabetes self-management education. A qualitative systematic review.	Inferred: Health Belief Model	**Design:** Qualitative systematic Review **Purpose:** To derive insights that will help in the development of more effective and personalized technology assisted DSME platforms that can be contextualized in	**N=** 13 articles, **Demographics:** 18-81 years, web based, mobile applications, DVD, virtual reality or tele health interventions. **Setting:** Mixed method or qualitative	RQ1: Patient views of TAHI RQ2: HCP views of TAHI RQ3: Factors that facilitate or hinder adoptions of technology for DMSE.	**Data Collection:** PRISMA, ENTREQ **Validity/ Reliability:** Standardized validated tools for SR data extraction. **Data Dependability:** Published studies, data	Content analysis, inter-rater reliability, interpretation of patterns and themes in textual data.	(1) Patients liked easy to use technology. (2) Providers liked technology that integrated with EMR easily. (3) Patients liked	**Level of Evidence:** 5 **Strengths**: Explores patient and provider attitudes towards technology and virtual education. Explores the perceived benefits and frustrations of day-to-day use.

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Citation	Theory/ Conceptual Framework	Design/ Method/ Sampling	Sample/ Setting	Major Themes Studied/ Definitions	Measurement/ Instrumentation	Data Analysis	Findings/ Themes	Level/ Quality of Evidence; Decision for/ Application to practice. Generalization
Country: Singapore **Funding**: Funded by author, Lay Hoon Goh. **Bias**: None recognized.		any healthcare setting.	articles form the United States, United Kingdom, Canada, Iran and Belgium. **Exclusion:** duplicates, not about DSME, wrong intervention, not about perspectives of DSME, quantitative analysis, abstract, not in		extraction repeatable.		moderated group interactions that were virtual.	**Weakness:** Small number of studies. **Feasibility:** Technology is integrated into medical care; patient's perceptions of use and benefit of use should be considered in technology implementation and roll out. **Application:** When

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			English, reviews, commentary **Attrition:** None					implementing a virtual education technology, familiarity of use, ease of use or an educational session for use should be considered. Also, time of use vs. time waiting for in person education should be considered.

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Table B
Synthesis Table

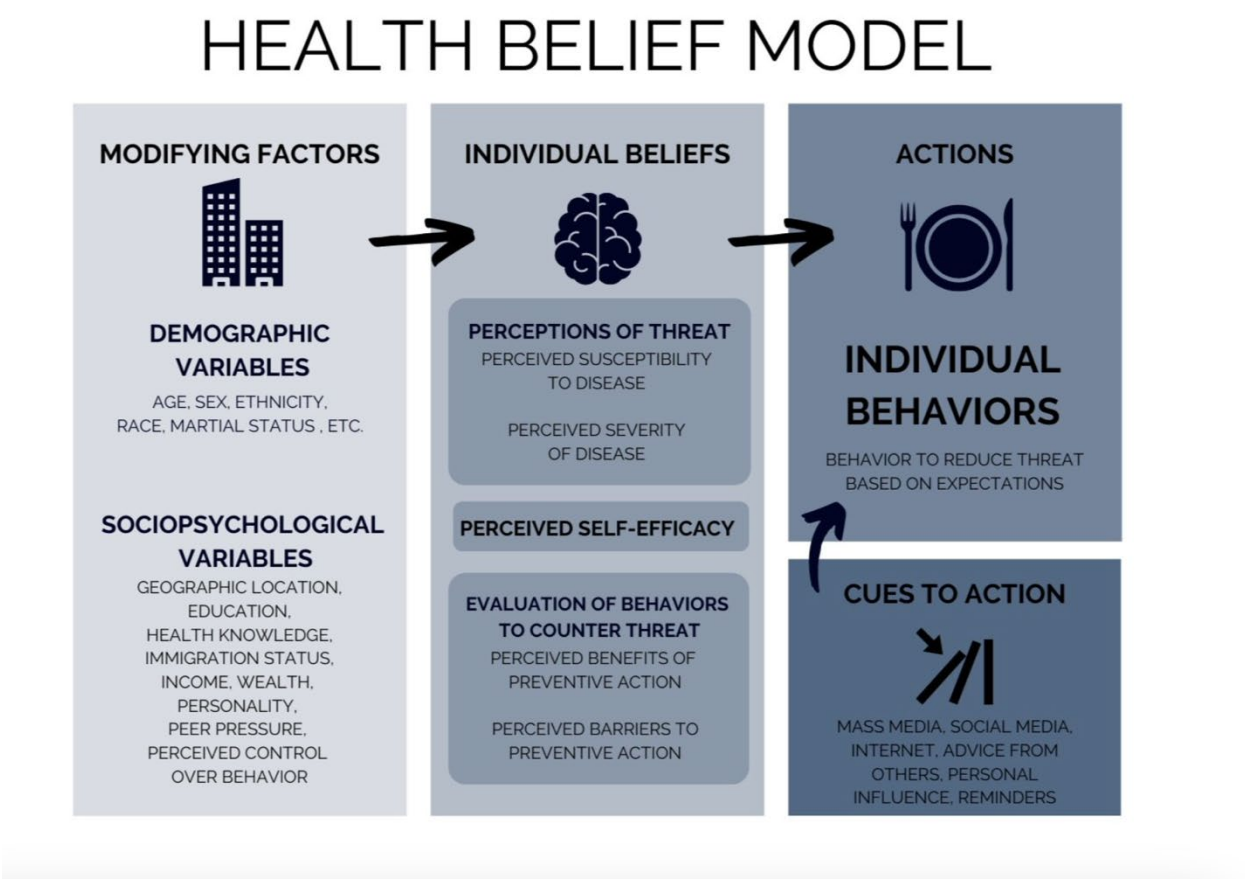
Study (Author, year)	Paragas et al., (2019).	Schechter et al., (2020).	Kim et al., (2023),	Lor et al., (2020).	Abrar et al., (2020).	Molavynejad, et al., (2022),	Kim et al., (2019).	McNab, et al., (2019).	Navarro et al., (2021).	Jain et al., (2020),
Design	QE	Cohort	Cohort	SR	CS	RCT	RCT	Cohort	SR	SR- Q
LOE	3	4	4	1	4	2	2	4	1	5
Sample										
Subjects	**N= 165**	**N= 323**	**N= 84**		**N= 40**	**N = 378**	**N = 151**	**N = 336**		
Studies				**N=6**					**N=12**	**N=13**
Country	**Philippines**	**US**	**US**	**US**	**Indonesia**	**Iran**	**South Korea**	**US**	**Spain**	**Singapore**
Diabetes	**X**	**X**	**X**	**X**	**X**	**X**	**X**		**X**	**X**
Chronic Disease		**X**		**X**				**X**	**X**	
Wound		**X**			**X**					
Age ≥ 18 years	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Setting										
Outpatient	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Inpatient		**X**					**X**		**X**	**X**
Interventions										
Video Education	**X**	**X**			**X**	**X**	**X**	**X**	**X**	**X**
Technology			**X**	**X**		**X**	**X**	**X**	**X**	
In person education	**X**	**X**				**X**		**X**		
Individual Education		**X**	**X**	**X**		**X**	**X**		**X**	**X**
Group Education	**X**				**X**	**X**		**X**	**X**	**X**
Outcomes/ Themes										
Disease Burden	↓	↓	↓	↓		↓	⇔			
Disease Knowledge	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Self-Care Behaviors	↑	↑	↑	↑	↑	↑	↑	↑	↑	
Technology Use				↑		↑				↑

Key: **CS** Cross Sectional **LOE** Level of Evidence **N** Number **RCT** Randomized Control Trial **SR** Systematic Review **SR-Q** Systematic Review of Qualitative Data **QE** Quasi Experimental **US** United States **X** included information ↑ Increase ↓ Decrease ⇔ Neutral

Appendix B

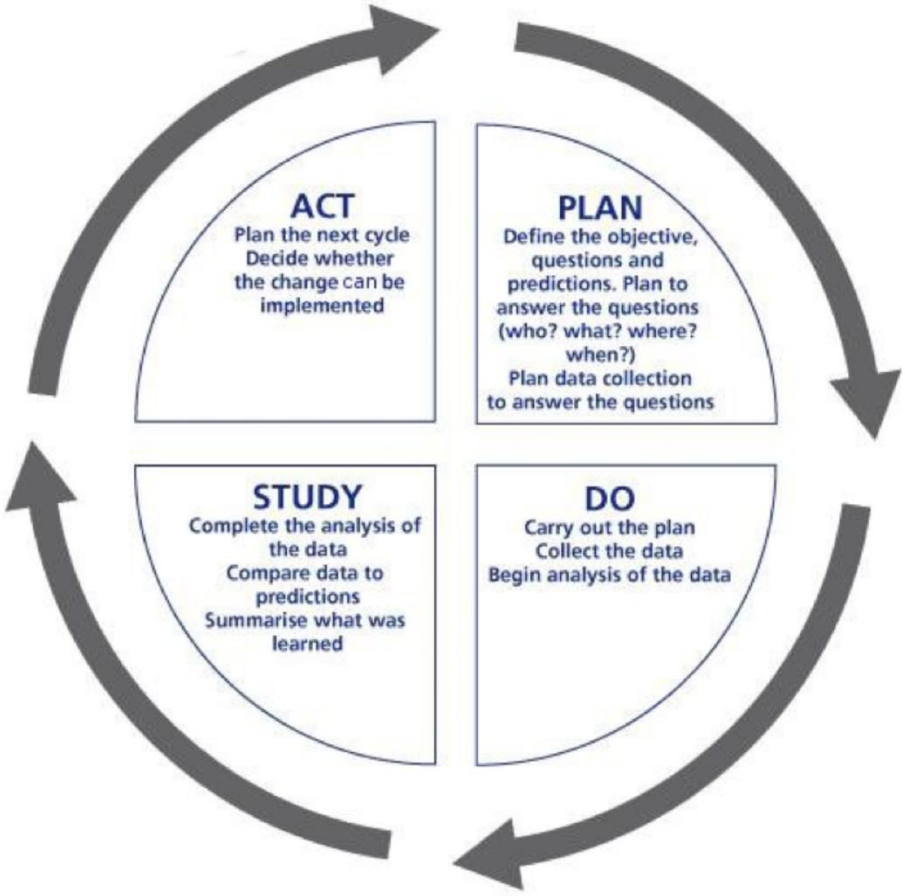
Theoretical and Implementation Frameworks

Figure B1
Health Belief Model



(Edible Psychology, 2021)

Figure B2
Plan, Do, Study, Act



(NHS England and NHS Improvement, n.d)

Appendix C

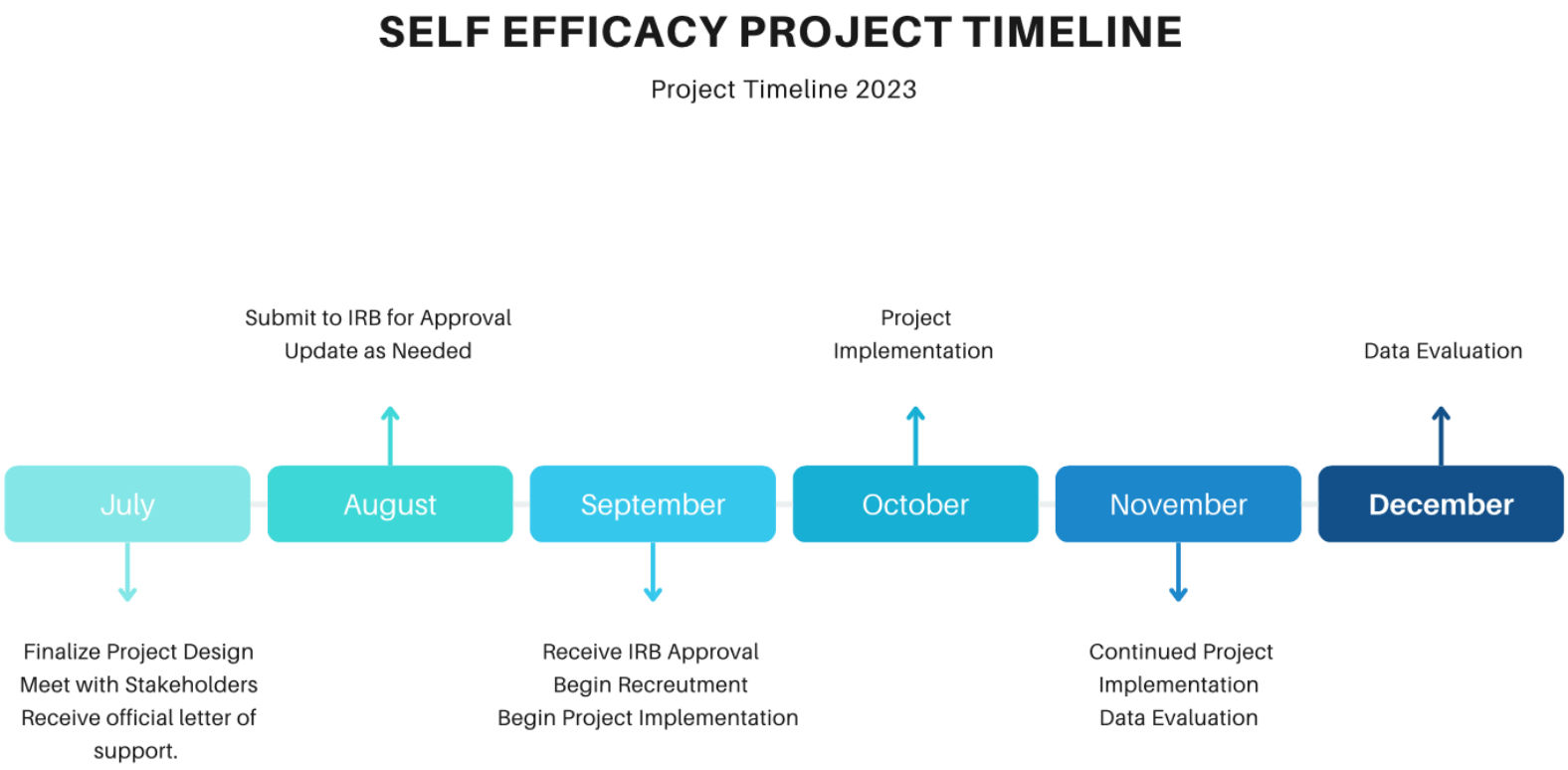
VeLUSET Tool

Developing expertise
I will try to remain positive that my ulcer will heal even when if it comes back
I feel confident to ask questions if there is something I do not understand about my treatment
I am confident I know why I have an ulcer
I am able to recognise the signs that my ulcer is returning
I am confident that I will be able to tell if a health professional gives me the wrong information about my ulcer/treatment
I am confident I know where to go to get help if I think my ulcer is coming back

(Brown et al., 2013)

Appendix D

Timeline



Appendix E

Internal Review Board Approval Letters

Protocol Approval

EXEMPTION GRANTED

Erin Tharalson
EDSON: DNP
-
Erin.Tharalson@asu.edu

Dear Erin Tharalson:

On 9/12/2023 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	Enhancing Self-Efficacy in Diabetic Foot Ulcer Management: An Audiovisual Pilot Project
Investigator:	Erin Tharalson
IRB ID:	STUDY00018528
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	• Diabetes Foot Ulcer Management_IRB Protocol_01-09-2023.docx, Category: IRB Protocol; • recruitment_methods_flyer_28-08-2023.pdf, Category: Recruitment Materials; • recruitment_methods_informed consent_28-08-2023.pdf, Category: Consent Form; • recruitment_methods_recruitment script_28-08-2023.pdf, Category: Recruitment Materials; • supporting_documents_infographic_28-08-2023.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • supporting_documents_letter of support_28-08-2023.pdf, Category: Off-site authorizations (school permission, other IRB approvals, Tribal permission etc); • supporting_documents_surveys and tools_post-intervention_28-08-2023docx.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions);

	• supporting_documents_surveys and tools_pre-intervention_28-08-2023.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • supporting_documents_surveys and tools_Visit 2 form_28-08-2023.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • supporting_documents_video_english_28-08-2023.pdf, Category: Other;

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2)(i) Tests, surveys, interviews, or observation (non-identifiable) on 9/12/2023.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

If any changes are made to the study, the IRB must be notified at research.integrity@asu.edu to determine if additional reviews/approvals are required. Changes may include but not limited to revisions to data collection, survey and/or interview questions, and vulnerable populations, etc.

Sincerely,

IRB Administrator

cc: Heather Muench
Erin Tharalson
Heather Muench

Translation Certificate Approval

EXEMPTION GRANTED

Erin Tharalson
EDSON: DNP
-
Erin.Tharalson@asu.edu

Dear Erin Tharalson:

On 10/2/2023 the ASU IRB reviewed the following protocol:

Type of Review:	Modification / Update
Title:	Enhancing Self-Efficacy in Diabetic Foot Ulcer Management: An Audiovisual Pilot Project
Investigator:	Erin Tharalson
IRB ID:	STUDY00018528
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	• recruitment_methods_flyer_spanish_01-10-2023.pdf, Category: Recruitment Materials; • recruitment_methods_informed consent_Spanish_01-10-2023..pdf, Category: Consent Form; • recruitment_methods_recruitment script_Spanish_01-10-2023..pdf, Category: Recruitment Materials; • supporting_documents_infographic_spanish_01-10-2023..pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • supporting_documents_surveys and tools_post-intervention_spanish_01-10-2023..pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • supporting_documents_surveys and tools_pre-intervention_spanish_01-10-2023..pdf, Category: Measures (Survey questions/Interview questions

	/interview guides/focus group questions); • supporting_documents_surveys and tools_Visit 2 form_spanish_01-10-2023..pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • supporting_documents_video_spanish_01-10-2023.pdf, Category: Other; • translation_certificate_Volume One_01_10_2023.pdf, Category: Translations; • translation_certificate_Volume Two_01_10_2023.pdf, Category: Translations;

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2)(i) Tests, surveys, interviews, or observation (non-identifiable) on 10/2/2023.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

If any changes are made to the study, the IRB must be notified at research.integrity@asu.edu to determine if additional reviews/approvals are required. Changes may include but not limited to revisions to data collection, survey and/or interview que

mailto:research.integrity@asu.edu

Sincerely,

IRB Administrator

cc: Heather Muench
Erin Tharalson
Heather Muench

Appendix F

Recruitment Materials

Recruitment Flyer English

ASU Arizona State University

Project Participation Opportunity

Enhancing Self-Efficacy with Diabetic Foot Ulcers

You are invited to participate in a quality improvement project that is conducted by Arizona State University. Participation is voluntary, and you can withdraw from the study anytime. **The purpose of this project is to provide consistent wound care education and increase participant self-efficacy.**

Project Participation

Participation will be part of your scheduled wound care visit. We will ask you to:

- Answer a questionnaire
- Watch a 5-minute educational video at two different appointments
- Answer another questionnaire after two sessions

You may be eligible to participate if:

- You are 18-90 years old
- You have diabetes
- You have a wound on your foot
- You are fluent in either English or Spanish

For more information, contact Heather Muench, at hmuench@asu.edu or let the front desk team at SVDP know you are interested.

Recruitment Flyer Spanish

ASU Arizona State University

Oportunidad de Participación en el

Mejorando la Autoeficacia en Úlceras de Pie Diabético

Estás invitado a participar en un proyecto de mejora de la calidad realizado por la Universidad Estatal de Arizona. El propósito de este proyecto es brindar educación sobre el cuidado de heridas y aumentar la confianza de los participantes en el cuidado de sus heridas.

Participación en el Proyecto

La participación será parte de tu visita programada de cuidado de heridas. Te pediremos que:

- **Mires un video educativo de 5 minutos en dos citas diferentes.**
- **Completes una encuesta antes y después de la implementación del proyecto que tomará menos de 5 minutos.**

Podrías ser elegible para participar si:

- **Tienes más de 18 años.**
- **Tienes diabetes.**
- **Tienes una herida en el pie.**
- **Hablas fluidamente inglés o español.**
- **Cuidas a alguien con diabetes y una herida en el pie**

Para obtener más información, comuníquese con Heather Muench en hmuench@asu.edu.

* La participación es voluntaria, y puedes retirarte del estudio en cualquier momento. La participación no afectará tu atención en la clínica

Recruitment Script English

RECRUITMENT SCRIPT

My name is Heather Muench; I am a graduate student under the direction of Clinical Assistant Professor Erin Tharalson, DNP, RN, ANP-BC, CWS, in the College of Nursing and Health Innovation at Arizona State University. I am conducting an evidence-based project at a community clinic focusing on improving your education and confidence in the management of your wound.

I am recruiting any individual interested in participation in two education sessions occurring during two different wound appointments in which you will watch a short video on wound care (< 5-minute video) and provided a flyer on caring for your wound. In addition, a pre and post-intervention survey will be distributed to the participants at the start and end of the intervention, each survey takes less than 5 minutes to complete. Each session will take 10 minutes of your time total.

To participate, you must be 18 years or older, able to speak, read, and understand English or Spanish, have a diabetic foot wound, or care for a patient with a diabetic foot wound. Your participation in this project is voluntary. If you choose not to participate in this project or withdraw at any time, it will not impact your care in the clinic. If you have any questions concerning the project, please email at hmuench@asu.edu.

Recruitment Script Spanish

ASU Knowledge Enterprise Development
Arizona State University

GUION DE RECLUTAMIENTO

Mi nombre es Heather Muench; soy estudiante de posgrado bajo la dirección de la Profesora Asistente Clínica Erin Tharalson, DNP, RN, ANP-BC, CWS, en la Facultad de Enfermería e Innovación en Salud de la Universidad Estatal de Arizona. Estoy llevando a cabo un proyecto basado en evidencia en una clínica comunitaria centrado en mejorar su educación y confianza en el manejo de su herida.

Estoy reclutando a cualquier persona interesada en participar en dos sesiones educativas que se llevarán a cabo durante dos citas diferentes para el cuidado de heridas, en las cuales verá un video corto sobre el cuidado de heridas (video de menos de 5 minutos) y recibirá un folleto sobre cómo cuidar su herida. Además, se distribuirá una encuesta pre y post intervención a los participantes al inicio y al final de la intervención, cada encuesta tarda menos de 5 minutos en completarse. Cada sesión requerirá un total de 10 minutos de su tiempo.

Para participar, debe tener 18 años o más, ser capaz de hablar, leer y entender inglés o español, tener una herida en el pie debido a la diabetes o cuidar a un paciente con una herida en el pie por diabetes. Su participación en este proyecto es voluntaria. Si decide no participar en este proyecto o retirarse en cualquier momento, no afectará su atención en la clínica. Si tiene alguna pregunta sobre el proyecto, por favor envíe un correo electrónico a hmuench@asu.edu.

Appendix G

Informed Consent

Informed Consent English

Enhancing Self-Efficacy in Diabetic Foot Ulcer Management: An Audiovisual Pilot Project

I am a graduate student under the direction of Clinical Assistant Professor Dr. Erin Tharalson from the Edson College of Nursing and Health Innovation at Arizona State University. I am conducting an evidence-based practice improvement project to evaluate a wound educational program that may improve your wound care knowledge and your confidence in caring for a diabetic foot ulcer (wound).

I invite your participation. The project will occur over 3 clinic visits. The first visit will involve a five-minute or less pre-intervention survey in which I assess demographics and self-efficacy (confidence) in wound care. You will then be invited to view a five-minute video education session demonstrating how to care for a diabetic foot ulcer. After viewing the video, you will receive a handout of the wound care education from the video, a QR code to access the video, and clinic contact information. During the second wound clinic visit, you will view the five-minute educational video again and complete a form with one question asking if you have or have not watched the video. During your third wound care visit, you will be asked to complete a post-intervention survey on self-efficacy and an opinion survey that will take approximately five minutes or less to complete. This will conclude your participation in the study. All education sessions will occur during your regularly scheduled wound clinic visit. All surveys and tools you complete will be linked using a participant ID. To create the participant ID, you will be instructed to pick the first three letters of your mother's name and the last three digits of your telephone number. This anonymous ID will be used to collect and analyze the data. No personal identifying information will be requested. For all surveys and tools, you have the right not to answer any question and stop participation anytime.

To participate, you must be 18 years or older, able to speak English or Spanish, have diabetes and a foot wound or care for someone with a diabetic foot wound. There are no foreseeable risks or discomforts to your participation. Your participation in this study is voluntary. You may decline to participate or withdraw at any time. If you choose not to participate in this project or withdraw at any time it will not impact your care or treatment at the clinic.

Your responses will be kept anonymous and protected. For the purposes of this project, we will not collect your name or any other personal identifying information. The de-identified data collected for the results of this project may be used in reports, presentations, or publications. The de-identified data collected as a part of current study may be shared with others (e.g., investigators, clinic administrators) for future research purposes or other uses. All data reporting will be aggregate and will not include any personal identifying information.

Completing the surveys will be considered your consent to participate.

If you have any questions concerning this evidenced based project, please contact the project team: Dr. Erin Tharalson erin.tharalson@asu.edu and Heather Muench, hmuench@asu.edu. If you have questions about your rights as a subject or participant in this project, or if you feel you have been placed at risk, you can contact the Chair of Human Subjects Institutional Review Board through the ASU Office of Research Integrity and Assurance, at (480) 965-6788.

Thank you,

Heather Muench, MSN, RN, BMT-CN, Graduate Student
Dr. Erin Tharalson, DNP, RN, ANP-BC, CWS

Informed Consent Spanish

Enhancing Self-Efficacy in Diabetic Foot Ulcer Management: An Audiovisual Pilot Project

Soy estudiante de posgrado bajo la dirección de la Profesora Asistente Clínica Dra. Erin Tharalson de la Facultad de Enfermería e Innovación en Salud Edson en la Universidad Estatal de Arizona. Estoy llevando a cabo un proyecto de mejora de prácticas basado en evidencia para evaluar un programa educativo sobre heridas que puede mejorar su conocimiento sobre el cuidado de heridas y su confianza al cuidar una úlcera de pie diabético.

Le invito a participar. El proyecto se llevará a cabo durante 3 visitas a la clínica. En la primera visita, se realizará una encuesta de preintervención de cinco minutos o menos en la que evaluaré datos demográficos y autoeficacia (confianza) en el cuidado de heridas. Luego, se le invitará a ver una sesión educativa en video de cinco minutos que muestra cómo cuidar una úlcera de pie diabético. Después de ver el video, recibirá un folleto con información sobre el cuidado de heridas del video, un código QR para acceder al video e información de contacto de la clínica. Durante la segunda visita a la clínica de heridas, verá nuevamente el video educativo de cinco minutos y completará un formulario con una pregunta sobre si ha visto o no el video. Durante su tercera visita de cuidado de heridas, se le pedirá que complete una encuesta de postintervención sobre la autoeficacia y una encuesta de opinión que tomará aproximadamente cinco minutos o menos para completar. Esto concluirá su participación en el estudio. Todas las sesiones educativas se llevarán a cabo durante su visita a la clínica de heridas programada regularmente. Todas las encuestas y herramientas que complete estarán vinculadas mediante un identificador de participante. Para crear este identificador de participante, se le indicará que elija las primeras tres letras del nombre de su madre y los últimos tres dígitos de su número de teléfono. Este identificador anónimo se utilizará para recopilar y analizar los datos. No se solicitará ninguna información personal identificable. Para todas las encuestas y herramientas, tiene derecho a no responder ninguna pregunta y a detener su participación en cualquier momento.

Para participar, debe tener 18 años o más, poder hablar inglés o español, tener diabetes y una herida en el pie o cuidar a alguien con una herida en el pie debido a la diabetes. No hay riesgos previsibles ni molestias para su participación. Su participación en este estudio es voluntaria. Puede optar por no participar o retirarse en cualquier momento. Si decide no participar en este proyecto o retirarse en cualquier momento, no afectará su atención o tratamiento en la clínica.

Sus respuestas se mantendrán anónimas y protegidas. Para los fines de este proyecto, no recopilaremos su nombre ni ninguna otra información personal identificable. Los datos desidentificados recopilados para los resultados de este proyecto pueden utilizarse en informes, presentaciones o publicaciones. Los datos desidentificados recopilados como parte del estudio actual pueden compartirse con otras personas (por ejemplo, investigadores, administradores de la clínica) para futuras investigaciones u otros usos. Todos los informes de datos serán agregados y no incluirán ninguna información personal identificable.

Completar esta encuesta se considerará como acuerdo de su participacion.

Si tiene alguna pregunta sobre este proyecto basado en evidencia, comuníquese con el equipo del proyecto: Dra. Erin Tharalson erin.tharalson@asu.edu y Heather Muench, hmuench@asu.edu.

Si tiene preguntas sobre sus derechos como sujeto o participante en este proyecto, o si cree que se le ha puesto en riesgo, puede comunicarse con el Presidente de la Junta Institucional de

Revisión de Sujetos Humanos a través de la Oficina de Integridad y Aseguramiento de la Investigación de ASU, al (480) 965-6788.

Gracias,

Heather Muench, MSN, RN, BMT-CN, Estudiante de Posgrado
Dra. Erin Tharalson, DNP, RN, ANP-BC, CWS

Appendix H

Materials

Infographic English

Infographic Spanish

English Demographic Survey

Date: __ __/__ __/__ __ __ __
dd mm yyyy

Participant ID # __ __ __ __ __ __
First 3 letters of mother's name, last 3 numbers of phone number

Pre-Intervention Survey: Demographics (Patient)

Instructions: Mark your answer with an "X" in the box or write in the space provided.

Age in years: _____

Sex: ☐ Male
☐ Female

Language preference:
☐ English
☐ Spanish

Race/Ethnicity:
☐ White, non-Hispanic
☐ Hispanic
☐ Black or African American
☐ Asian
☐ Other

Visit type:
☐ This is my first visit to the wound clinic
☐ This is a follow-up visit to the wound clinic

How many times have you received wound care education?
☐ Four or more times
☐ Three times
☐ Two times
☐ Once
☐ Never

How often do you care for your wound yourself?
☐ Always
☐ Often
☐ Sometimes
☐ Rarely
☐ Never

How often do you require assistance caring for your wound?
☐ Always
☐ Often
☐ Sometimes
☐ Rarely
☐ Never

English Pre-Intervention Survey

Date: __ __/__ __/__ __ __ __
dd mm yyyy

Participant ID # __ __ __ __ __ __
First 3 letters of mother's name, last 3 numbers of phone number

Pre-Intervention Survey: Developing Expertise (Patient)

Please read each statement and place a number in the box next to the statement that corresponds to your level of confidence regarding each statement.

0	1	2	3	4	5	6	7	8	9	10
	Completely Disagree				Moderately Agree				Completely Agree	

Developing Expertise		
I am confident that:		**Put no. here:**
1	I will try to remain positive that my ulcer will heal even when if it comes back	
2	I feel confident to ask questions if there is something I do not understand about my treatment	
3	I am confident I know why I have an ulcer	
4	I am able to recognize the signs that my ulcer is returning	
5	I am confident that I will be able to tell if a health professional gives me the wrong information about my ulcer/treatment	
6	I am confident I know where to go for help if I think my ulcer is coming back	

English Post Intervention Survey

Date: __ __/__ __/__ __ __ __ Participant ID # __ __ __ __ __ __
dd mm yyyy First 3 letters of mother's name, last 3 numbers of phone number

Post-Intervention Survey: Developing Expertise (Patient)

Please read each statement and place a number in the box next to the statement that corresponds to your level of confidence regarding each statement.

0	1	2	3	4	5	6	7	8	9	10
	Completely Disagree				Moderately Agree				Completely Agree	

Developing Expertise		
I am confident that:		**Put no. here:**
1	I will try to remain positive that my ulcer will heal even when if it comes back	
2	I feel confident to ask questions if there is something I do not understand about my treatment	
3	I am confident I know why I have an ulcer	
4	I am able to recognize the signs that my ulcer is returning	
5	I am confident that I will be able to tell if a health professional gives me the wrong information about my ulcer/treatment	
6	I am confident I know where to go for help if I think my ulcer is coming back	

English Participant Opinion Survey

Post Intervention Opinion Survey

Language of Resources Utilized:

(Check one box)

Spanish Language

English Language

	Indicate your agreement with the following statements:	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
1	The video covered basic wound care for diabetic foot ulcers.					
2	The education was easy to understand.					
3	I accessed the educational video in between clinic visits.					
4	I would recommend this video to other patients or family members.					
5	I like having access to the video after leaving the clinic.					
	Comments: (optional)					

Spanish Demographic Survey

Fecha: _ _/_ _/_ _ _ _
día mes año

#ID del Participante: _ _ _ _ _ _
Las 3 primeras letras del nombre de la madre, los últimos 3 números de teléfono

Encuesta de Pre-Intervención: Demográficas (Paciente)

Instrucciones: Marque su respuesta con una "X" en el cuadro o escriba en el espacio proporcionado.

Edad en años: _____

Género:
- ☐ Masculino
- ☐ Femenino

Lenguaje Preferido:
- ☐ Inglés
- ☐ Español

Raza/Etnicidad:
- ☐ Blanca, no-Hispana
- ☐ Hispana
- ☐ Negra o Afroamericana
- ☐ Asiática
- ☐ Otro

Tipo de visita:
- ☐ Está es mi primera visita a la clínica de heridas
- ☐ Está es una visita de seguimiento a la clínica de heridas

¿Cuántas veces usted ha recibido educación de cuidado a la herida?
- ☐ Cuatro veces o mas
- ☐ Tres veces
- ☐ Dos veces
- ☐ Una vez
- ☐ Nunca

¿Cuántas veces usted asiste en el cuidado de herida (s)?
- ☐ Siempre
- ☐ Seguido
- ☐ A veces
- ☐ Raramente
- ☐ Nunca

Spanish Pre-intervention Survey

Fecha: _ _/_ _/_ _ _ _
día mes año

#ID del Participante: _ _ _ _ _ _
Las 3 primeras letras del nombre de la madre, los últimos 3 números de teléfono

Encuesta de Post-Intervención: Desarrollando al Experto (Paciente)

Por favor lea cada declaración y ponga un número en el cuadro enseguida de la declaración que corresponde a su nivel de confianza en lo que se refiere a cada declaración.

0	1	2	3	4	5	6	7	8	9	10
Completamente en Desacuerdo				Moderadamente de Acuerdo				Completamente de Acuerdo		

Experto en Desarrollo		
Yo tengo confianza que:		**Ponga núm. Aquí:**
1	Yo voy a tratar de mantenerme positivo que mi ulcera va a sanar aun cuando y sí es qué regresa	
2	Yo siento la confianza de hacer preguntas si hay algo que yo no entiendo sobre mi tratamiento	
3	Yo tengo la confianza que yo sé porque yo tengo una ulcera	
4	Yo puedo reconocer las señales que mi ulcera está regresando	
5	Yo tengo la confianza que yo voy a poder reconocer si un profesional de la salud me da la información incorrecta sobre mi ulcera/tratamiento	
6	Yo tengo la confianza que yo sé en dónde puedo ir a pedir ayuda si pienso que mi ulcera está regresando	

Spanish Post Intervention Survey

Fecha: _ _/_ _/_ _ _ _
día mes año

#ID del Participante: _ _ _ _ _ _
Las 3 primeras letras del nombre de la madre, los últimos 3 números de teléfono

Encuesta de Post-Intervención: Desarrollando al Experto (Paciente)

Por favor lea cada declaración y ponga un número en el cuadro enseguida de la declaración que corresponde a su nivel de confianza en lo que se refiere a cada declaración.

0	1	2	3	4	5	6	7	8	9	10
Completamente en Desacuerdo				Moderadamente de Acuerdo				Completamente de Acuerdo		

Experto en Desarrollo		
Yo tengo confianza que:		**Ponga núm. Aquí:**
1	Yo voy a tratar de mantenerme positivo que mi ulcera va a sanar aun cuando y sí es qué regresa	
2	Yo siento la confianza de hacer preguntas si hay algo que yo no entiendo sobre mi tratamiento	
3	Yo tengo la confianza que yo sé porque yo tengo una ulcera	
4	Yo puedo reconocer las señales que mi ulcera está regresando	
5	Yo tengo la confianza que yo voy a poder reconocer si un profesional de la salud me da la información incorrecta sobre mi ulcera/tratamiento	
6	Yo tengo la confianza que yo sé en dónde puedo ir a pedir ayuda si pienso que mi ulcera está regresando	

Spanish Participant Opinion Survey

Fecha: _ _/_ _/_ _ _ _
día mes año

#ID del Participante: _ _ _ _ _ _
Las 3 primeras letras del nombre de la madre, los últimos 3 números de teléfono

Encuesta de Post-Intervención: Encuesta de Opinión (Paciente)

Lea cada declaración. Califique cada declaración marcando un cuadro que corresponda a ¿Cómo usted se siente sobe la declaración?

		Firmemente De Acuerdo	De Acuerdo	Neutral	Desacuerdo	Firmemente en Desacuerdo
1	El video cubrió cuidado básico de herida para las ulceras en el pie diabético.					
2	La educación fue fácil de entender.					
3	Yo tomé acceso al video de educación entre visitas a la clínica.					
4	Yo recomiendo esté video a otros pacientes o miembros de la familia.					
5	Me gusta poder tener acceso a el video después de que dejo la clínica.					
	Comentarios: (Opcional)					

Appendix I

Budget

Phase	Activities	Cost	subtotal	Total
Preparation	Print 50 recruitment flyers to post in clinic	$50 DC		
	Educational video created by ASU alumni in English and Spanish	Donated by ASU Alumni IC		
	Print 20 Spanish consent forms and 10 English consent forms	$10 DC		
	Hire Spanish translator estimated 30 hours @ $12/hr to translate printed materials	Donated by Interpreters DC		
	Print pre and post evaluation tools and handouts 60 count	$30 DC		
	Lockbox to store completed consents	$40 IC		
	Print educational pamphlet with QR code 30 count	$90 DC		
	Electronic tablet for educational video viewing	Donated by author DC		
	Black ink pens for filling out consent forms	$10 IC	$230	
Delivery	Clinic space for patients to watch videos	Donated by clinic DC		
	Interpreter to assist with consenting and patient visits	Donated by clinic DC		
	MA time to assist with rooming patients	Donated by clinic IC	$0	
Evaluation	Intellectus Software to evaluate descriptive statistics	Free, access by ASU for graduate DNP students IC	$0	**$230**

Appendix J

Results Tables and Figures

Table 1
Age

Variable	*M*	*SD*	*n*	Min	Max	*Mdn*
Age	45.83	10.21	6	32.00	62.00	44.00

Table 2
Demographics

Variable	*n*	*%*
Language		
Spanish	4	66.67
English	2	33.33
Ed Received		
More than 4	2	33.33
Never	3	50.00
Once	1	16.67
Race		
Hispanic	6	100.00
Assistance Required		
At times	2	33.33
Never	2	33.33
Always	2	33.33
Gender		
Male	3	50.00
Female	3	50.00
Visit Type		
Follow up	3	50.00
First	3	50.00

Note. Due to rounding errors, percentages may not equal 100%.

Table 3

Difference Between Pre- and Post-Intervention Confidence Scores

Pre_Confidence		Post_Confidence				
M	*SD*	*M*	*SD*	*t*	*p*	*d*
56.00	4.55	58.50	1.73	-1.61	.206	0.80

Note. N = 4. Degrees of Freedom for the *t*-statistic = 3. *d* represents Cohen's *d.*

Figure 1
Graph of Mean Pre-Confidence and Post-Confidence Scores