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RESEARCH ARTICLE

Equity of Care: Promoting the Use of Interpretation Services

Rosa M. Portillo, DNP, APRN, FNP-C[1], Kelly S. Crawford, DNP, APRN, FNP-C[2]*

[1]Doctor of Nursing Practice at Texas Wesleyan University, USA.
[2]Associate Professor of Graduate Nursing at Texas Wesleyan University, USA.

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Corresponding Author: Kelly S. Crawford, Associate Professor of Graduate Nursing at Texas Wesleyan University, USA.

Abstract

Introduction: Language barriers significantly impact the care received by patients with limited English proficiency (LEP). Effective communication is the foundation of the nurse-patient relationship, where the patient feels cared for, heard, and included in shared decision-making. Both nurses and LEP patients deserve efficient ways to interact, thereby optimizing patient outcomes. The purpose of this quality improvement project was to implement an educational in-service for staff nurses on the use of interpretation services, aiming to enhance their knowledge and attitudes toward these services.

Methodology: An educational in-service was implemented in four hospital units. Staff nurses completed the same knowledge and attitude questionnaire before the in-service, immediately after the in-service, and a third time, 90 days after the in-service.

Results: Nurses' knowledge significantly increased after the educational in-service, as evidenced by increased mean scores. Nurses' attitudes towards the use of interpretation services improved, as evidenced by increased median scores. Staff nurses displayed a decrease in barriers to using interpretation services, as evidenced by attitude questionnaire responses.

Discussion: Nurses demonstrated improved knowledge and attitudes after the educational in-service. The knowledge gained and improvement in attitudes were sustained for three months. Hospitals may benefit from incorporating an educational session on the use of interpretation services into their orientation and new-hire onboarding processes, as well as annually, for employees.

Keywords: Limited English Proficiency, Interpretation Services, Communication, and Health Equity.

1. Overview of the Problem of Interest

Nurses are caregivers who play a critical role in managing their patients' healthcare needs. They are responsible for the holistic care of their patients, which includes the patient's spiritual, developmental, psychosocial, and cultural needs (Smith, 2021). When caring for limited English proficient (LEP) patients, effective communication enables the patient to participate in making and the nurse to provide culturally competent care. Effective communication is cruparticipate in informed decision-making. When patients understand what is being said about their care and treatment, they are more likely to follow health-related recommendations (The Joint Commission, 2021). Research has shown that using qualified interpreters improves LEP patient care, including enhanced patient-provider communication, increased patient satisfaction, improved safety, higher quality of care, and better health outcomes (Fox et al., 2020). Unfortunately, a gap exists between the LEP patient's need for qualified interpretation services and their healthcare team's utilization of language assistance.

1.1 Scholarly Project

Hospitals often fall short and fail to inform LEP patients of their right to an interpreter and fail to offer interpretation services/language assistance (Taira

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et al., 2019; The Joint Commission, 2021). Nurses who care for LEP patients play a vital role in patient communication. The project focused on providing an educational intervention for staff nurses to improve their knowledge and attitudes toward the use of professional interpretation services.

1.2. Background and Significance

The LEP population is a large and growing population in the United States. Data from the Census Bureau analyses reveal that 67.3 million residents in the United States speak a language other than English at home, and nearly 26 million have limited English proficiency (Taira et al., 2019; The Joint Commission, 2021). The use of interpretation services is imperative for equitable quality of care when caring for LEP patients. Research has shown that using qualified interpreters improves LEP patient care, including increased patient-provider communication, patient satisfaction, safety, quality of care, and health outcomes (Fox et al., 2020). When not used, however, it can have detrimental effects on patient care. When compared to English proficient patients, LEP patients are at a higher risk for adverse events: they have an increased risk of unnecessary emergency department testing and repeat visits, increased risk of surgical delays because of trouble understanding instructions such as how to prepare for the procedure, and have a higher rate of readmissions for chronic conditions due to difficulty understanding medication regimens, how to manage their care, and which symptoms to be aware of that would prompt immediate or follow-up care. Furthermore, LEP patients have more severe adverse events; they are at greater risk of falls, pressure ulcers, surgical infections, and worse patient experiences (Fox et al., 2020; The Joint Commission, 2021).

Taira et al. (2019) report that the underuse of interpretation services is normalized in the medical culture and that providers believe calling an interpreter is a trade-off with their efficiency. Healthcare professionals who use interpretation services when caring for LEP patients have reported barriers to use, including time and workflow constraints, varying interpretation quality, supply-demand mismatch, and gaps in communication between staff and interpretation services (Fox et al., 2020). Furthermore, the Joint Commission (2021) recognizes that provider use of basic language skills to "get by" and/or the use of friends, family members, or nonqualified staff as interpreters affect the LEP patient's care.

1.3 Project Purpose

The DNP project aimed to implement an educational in-service for staff nurses on the use of interpretation services to improve their knowledge and attitudes toward using qualified interpretation services when caring for LEP patients. The project intended to demonstrate that by increasing staff nurses' knowledge related to the use of interpretation services, decreasing perceived barriers to use, and improving attitudes toward the use of interpretation services, staff nurses would increase their use of interpretation services when caring for LEP patients.

1.4 Clinical Question

Gallagher Ford and Melnyk (2019) explain that a clinical question is the first step in the evidence-based practice process. The clinical question is asked in PICOT format. Gallagher Ford and Melnyk (2019) describe the PICOT question as a search strategy; a method to identify useful terms to find the best evidence to respond to a clinical question. A PICOT statement leads to an unbiased and effective search that yields evidence; this evidence answers the clinical question and reinforces the evidence-based practice/ recommendation (Gallagher Ford & Melnyk,

2019). The PICO model can be broken down into the following components: (P) the patient, problem, or population, (I) the intervention, exposure, or prognostic factor, (C) the comparison or main alternative, if any, and (O) the outcome, or what is trying to be accomplished, measured, improved, or affected (Duke University Medical Center Library and Archives, 2022; Southern et al., 2022). Some PICO questions may have a (T) added, which represents the timeframe, type of study, or type of question (Southern Illinois University Edwardsville, 2022). The population for this DNP project was staff nurses who provided care to LEP patients. Four hospital units: surgical services (OR, outpatient/PreOp, and PACU) mother/baby, surgical care (med-surg), and emergency room (ER), were surveyed. The intervention was an educational session on the importance of utilizing professional interpretation services that included hands-on training on how to access, use, and troubleshoot different delivery modes of language services. The expected outcomes were to increase staff nurses' knowledge related to the use of interpretation services, decrease perceived barriers to use, and improve attitudes toward using interpretation services. A comparison was made between the nurses' knowledge and attitudes toward using interpretation services before and after the educational session. A time component was added, and nurses' knowledge and attitudes were also surveyed 90 days after the educational session.

The PICOT statement for this project read: For nurses who care for LEP patients(P), does the implementation of an in-depth, hands-on educational session on the use of interpretation services(I) improve the nurse's knowledge and attitude toward use(O), 90 days after the session (T) when compared to initial knowledge and attitude.

Language barriers impact the healthcare of LEP patients. Effective communication is necessary for patient understanding and compliance. The use of interpretation services supports effective communication and allows LEP patients to receive care in the language they understand. It is imperative for nurses who care for LEP patients to be knowledgeable and use these essential resources.

2. Review of Literature and Theoretical Framework

It has been established that interpretation services are crucial for successful communication between patients and their healthcare team. Bentancur et al. (2020), identified effective communication between the nurse and the limited English proficient (LEP) patient as essential in providing patient centered care. This chapter presents a review of literature for current evidence related to the use of professional interpretation services and the implementation of an educational intervention for staff nurses. This chapter also covers the theoretical underpinning that supports the DNP project.

2.1 Search Strategy

A literature review was conducted with the guidance of the PICOT question. Online databases available through the Texas Wesleyan University's West Library were utilized. These included PubMed, Medline Complete, CINAHL Complete, EBSCO Discovery, and Cochrane Library. Google Scholar and the Joint Commission website were also used. Keywords utilized were "LEP," "limited English proficiency," "nurses use of interpretation services," "interpretation services in healthcare," "language barriers," "access to interpretation services," "language services," "mobile app for interpretation in healthcare," "increasing communication between LEP patient and nurse," "cultural awareness," "culturally competent care and LEP patient," and "communicating with LEP patients." Search criteria included peer-reviewed journals, current literature between the years 2017-2022, and literature in the English language. Results yielded literature that included studies in the United States and abroad. For this project, only results conducted in the United States were utilized. In addition, because this project focused on an intervention for staff nurses, only studies that utilized nurses or healthcare providers as their participants were used. Eight articles were identified as having the best evidence. Of these, there were two systemic reviews of literature, one descriptive study, one cross-sectional study, two qualitative studies, and two prospective pre-post studies.

2.2 Review of Literature

The Joint Commission (2021) issued an advisory on safety and quality to raise awareness on overcoming the challenges of providing care to LEP patients. They report that language barriers significantly impact safe and effective LEP healthcare. In addition to increased adverse events, LEP patients have more extended hospital stays when professional interpreters are not used at admission and/or discharge. The Joint Commission further emphasizes that using family members, nonqualified staff, or friends as interpreters and the provider's use of basic language to "get by" are challenges that affect the LEP patient's care. Rimmer (2020) explains that medical interpreters are trained and experienced in interpreting medical dialogue neutrally and passively, which a family member may lack. Family members may not interpret correctly, give their own version of events, and skew the whole consultation, which could lead to a misdiagnosis. Rimmer stresses that a patient may not disclose all relevant information or details through a family member due to feeling uncomfortable sharing personal details. Furthermore, family members may find it difficult to share bad news with the patient, they may have an emotional or cultural reason to distort the message, or they may simply not understand the English language well enough to adequately communicate complex medical information, all leading to the patient not receiving essential information (Rimmer, 2020). The Joint Commission (2021) recommends integrating professional, dedicated interpreters into the care team and consistently using telephone and video interpretation in the everyday workflow, even for small interactions.

Fox et al. (2020) presented a descriptive analysis study where 68 staff members and providers reported a lack of confidence in communicating and forming therapeutic relationships with LEP patients effectively. Focus groups revealed that staff knew the importance of using interpretation services and recognized knowledge as a facilitator of interpreter use but identified barriers that prevented them from using them. Barriers identified included workflow

constraints, varying interpretation quality, supply-demand mismatch, and gaps in communication with interpretation services management. They concluded that barriers to use were the primary cause of interpreter underuse. Similarly, 44 nurses who participated in the cross-sectional study conducted by Bentancur et al. (2020) demonstrated moderate to high levels of cultural awareness but identified challenges and needs when caring for LEP patients. These nurses reported that their primary challenges when caring for LEP patients were communication due to language barriers and the inability to educate patients on their diagnosis and plan of care properly. The reported challenges that affected their use of interpretation services were the inability to access the services expeditiously and the lack of time to address all needs while using the services. Participants also noted that patients were hesitant to ask questions or request interpretation services, making it difficult to address their needs (Bentancur et al., 2020).

Tam et al. (2020) conducted a qualitative study to analyze staff perspectives on using interpretation services. This study was unique because it included the perspective of hospital-employed in-person Spanish interpreters, attendings, residents, and unit nurses. All participants agreed that telephone interpretation services were the fastest and most convenient but found them impersonal and limited by long pauses, poor reception, and lack of visual cues. Providers reported that they knew using family members was not ideal but felt it was the only option when dealing with rare languages and dialects. The long wait times for an in-person interpreter and overconfidence in Spanish skills were cited as the most consistent barriers to the use of interpretation services. The patient and their family's overconfidence in their English skills also made it challenging to identify the need for interpretation services (Tam et al., 2020).

2.3 Evidence for Intervention

Taira et al. (2019) conducted a systemic review of literature on interventions that improve the quality of care, health outcomes, or communication with LEP patients. Most studies reviewed concentrated on language services utilization, access to care, metric tracking, and patient communication. Results from 19 studies revealed that language services utilization was extremely low pre-intervention and remained low post-intervention. Interventions that include education, elements of administrative emphasis, and process evaluation appeared to improve language services use and communication. A gap was identified in the existing evidence available to help guide health systems and hospitals in improvement strategies for LEP patient care. They concluded that based on the large and persistent performance gaps in the delivery of language services for LEP patients, health systems, hospitals, and granting agencies should invest in implementation and dissemination research focused on language service use.

Nurses must be knowledgeable about offering interpretation services to their LEP patients. Lopez-Bushnell et al. (2020) conducted a prospective pre-post study with an educational intervention to increase the usage of interpreter language services and improve communication between LEP patients and their providers. The intervention included accessing the resources, regulatory requirements, and best practices. Results showed a significant increase in providers' use of interpreter language services after the educational intervention. Patient survey results demonstrated significant ($p<0.05$) findings in patient responses related to interpretation services usage. The question "does the nursing staff explain your medications, tests, labs, diets, daily goals, etc., with the help of interpreter services/equipment?" had a p value of 0.007, "does the nursing staff communicate with you about activities of daily living with the help of interpreter services/equipment?" had a p value of 0.009, "do the doctors use interpreter services/equipment to communicate with you?" had a p value of 0.02, and "do you believe your communication needs are being met?" had a p value of 0.001 (p.93). It was concluded that when healthcare providers prove knowledgeable regarding language services, they increase their use of the services thus the communication between LEP patients and their providers improve (Lopez-Bushnell et al., 2020).

Ji et al. (2020) presented a systemic review of literature on the use of mobile technology in healthcare interpretation. Mobile technologies include portable devices used during patient encounters, such as mobile phones, tablets, and computers. Results show that patients are satisfied with any form of interpretation tool compared to no interpretation at all. Clinicians and patients prefer interpretation modalities that allow either in-person or video interpretation. Lastly, clinicians with no prior technological experience found simple-over-the-phone interpretation services satisfactory in overcoming language barriers (Ji et al., 2020).

Narang et al. (2019) conducted a prospective pre-post study to evaluate whether a mobile interpretation application would increase the number of calls made to over-the-phone interpreter (OPI) services

by clinicians in a New York City cancer center. The clinician's satisfaction with the mobile application was also assessed. Results showed that using the mobile application significantly increased the frequency of calls to OPI services. There was also continued use of the mobile app in the post-intervention period. Additionally, most participants reported that the app was straightforward to use, made calling interpreters easier, and reported that the app increased their likelihood of calling interpretation services.

2.4 Limitations of Literature Review

Although attempts were made to review literature for studies conducted in the United States, the systemic review conducted by Taira et al. (2019) included evidence from institutions in the United States, Canada, and Europe. Attempts were also made to eliminate small pilot studies, but Narang et al. (2019) were ultimately kept as evidence, and it was a pilot study. LEP encompasses different patient populations. While most studies included LEP patients with varying native languages and/or interpretation services that cover multiple languages, Tam et al.'s (2020) results were limited to Spanish interpretation services.

2.5 Gap Analysis

Communication is vital for patient safety and quality of care. LEP patients are a vulnerable population, and language barriers impact the safety and efficacy of healthcare. In the United States, every patient has the right to receive information in a manner they understand (The Joint Commission, 2021). As previously stated, a gap exists between the LEP patient's need for interpretation services and their healthcare team's utilization of them. Unfortunately, hospitals often fail to inform LEP patients of their right to an interpreter and neglect to offer interpretation services/language assistance (Taira et al., 2019; The Joint Commission, 2021). This problem is exacerbated by the normalization of using family members, friends, or the provider's basic language skills to "get by" as a trade-off to using professional interpretation services (Joint Commission, 2021).

2.6 Theoretical Framework

2.6.1 The Concept of Empathy

A conceptual model is an abstract and general representation of a phenomenon that interests members of a discipline (Fawcett, 2017). A concept may be a word or phrase that is "shorthand" for an idea. Every patient's experience is unique to their situation, and it is imperative for nurses to empathize and understand their patient's needs. Unfortunately, patients with limited English proficiency experience less empathetic care (Gutierrez et al., 2019). All nurses, especially those caring for LEP patients, must understand the concept of empathy. It is essential to practice empathy when caring for culturally diverse patients to understand patients' views, concerns and needs wholly. Patients with limited English proficiency are at risk of not being fully understood. It is important for nurses to recognize the need for interpretation services to enhance empathetic care.

Kerasidou (2020) stresses that empathy is a fundamental value of a patient-centered, relational healthcare model. Empathy allows healthcare professionals "to understand the patient's perspective and guide the patient in making the right decision; a decision which reflects the patient's needs, desires and ideals, and promotes health-related values" (Kerasidou, 2020, p.245). Empathy involves understanding cognitively and affectively, but if a language and/or cultural barrier exists, the lack of cognitive understanding can interfere with emotional understanding, thus leading to a lack of empathy.

Interpreters are part of the healthcare team and play a critical role in the communication between a patient and provider. Interpreters not only interpret medical terminology, but they also serve as empathetic cultural brokers that bridge the gap between cultures and aid healthcare team members in providing empathetic, culturally competent care. Silva et al. (2020) and Gutierrez et al. (2019) recognize the unique job that interpreters have. Silva et al. (2020) recognize that interpreters have a code of ethics to interpret messages accurately but may not always be able to interpret a specific message literally because of terminology that does not translate well or because of cultural differences. Gutierrez et al. (2019) refer to interpreters as agents of empathy for their ability to bridge sociocultural gaps between LEP patients and their physicians. Beneficial consequences of empathetic care include increased patient satisfaction, improved medical outcomes, and reduced patient psychological distress (Gutierrez et al., 2019). Kerasidou (2020) adds that increased treatment adherence is also a consequence of empathetic care. Based on the literature, it is imperative for nurses to practice empathy and recognize their patient's individual needs including the need for interpretation services.

2.7 Culture Care Theory

Madeleine Leininger is credited for creating transcultural nursing through her Culture Care Theory

(Leininger, 1991). Culture Care Theory emphasizes recognizing and understanding a patient's culture to influence nursing care. Application of Culture Care Theory involves providing culturally congruent nursing care and emphasizes understanding a patient's view of illness. (McEwen & Wills, 2019). For nurses to understand their patient's views, they must first understand what their patient is verbally saying. Interpretation services facilitate the verbal exchange between a nurse and patient and allow patients to communicate effectively. Furthermore, the concept of empathy closely relates to Culture Care Theory because it involves understanding a patient's individual outlook and views of their illness, caring for those feelings, thus sharing those feelings, and providing care based on the patient's needs. Providing nursing care that incorporates a patient's language and culture aligns with Madeleine Leininger's Culture Care Theory and with this project's objective of promoting the use of interpretation services when caring for LEP patients.

2.8 Change Theory

The changes the DNP project aims to achieve align with the Change Theory created by Kurt Lewin (Lewin, 1947). This theory includes three stages: unfreezing, moving, and refreezing (Barrow et al., 2021). Understanding that change is needed is the unfreezing stage and best aligns with the gap identified by the DNP project between the LEP patient's need for interpretation services and their healthcare team's utilization of these services. The intervention represented the moving stage, or change state, where the change was initiated. The change was driven by the educational intervention, which aimed to break down barriers to use and increase usage of interpretation services by staff nurses. Lastly, the refreezing stage will take effect once a new status quo of consistently offering interpretation services is established.

The review of literature and theoretical framework presented in this chapter reinforce the purpose of this project. It is important for staff nurses to recognize their patients' language needs and utilize qualified interpretation services when caring for LEP patients. Barriers to use must be overcome and empathetic culturally competent care must be practiced.

3. Methodology

Nursing skills and clinical judgment are guided by evidence-based practice (EBP). It is important that nurses understand the research behind their practice to understand the purpose of their practice better. Polit and Beck (2021) explain that EBP in nursing is the conscientious incorporation of current best evidence and other factors when making clinical decisions. This DNP project focused on reinforcing the evidence-based practice of offering and using interpretation services when caring for LEP patients. This chapter presents the DNP project plan and evaluation.

3.1 Project Planning

3.1.1 The Environment

The DNP project was carried out on four different units in a full-service hospital. The hospital prides itself in promoting a patient-centered environment, and the hospital's mission identifies its commitment to the care and improvement of patients' lives. The hospital is currently understaffed, and despite the circumstances, staff are cordial, professional, and willing to help one another.

The Transtheoretical Model, also known as the Stages of Change Model, identifies six stages that individuals move through during behavior change; it can be used to assess a person's current stage of change (LaMorte, 2022). The six stages are pre-contemplation, contemplation, preparation, action, maintenance, and termination. Staff nurse participants were expected to be between the contemplation to maintenance stages of change. Contemplation is the stage where people intend to start the behavior in the future. In this stage, people recognize their behavior may be problematic and are more thoughtful about making the change. These nurses know they should be offering interpretation services and intend to in the future. In the preparation stage, people are ready to make the change soon and may have started to take steps toward changing their behavior. These nurses have asked about offering interpretation services and are interested in learning more about the subject. In the action stage, people have recently changed their behavior and intend to keep moving forward. These nurses have offered interpretation services and are ready to learn additional tidbits. Lastly, in the maintenance stage, people have sustained their behavior and intend to maintain the behavior (LaMorte, 2022). These are the nurses who routinely offer interpretation services and intend to continue.

3.2 Interdisciplinary Team

Interprofessional collaboration enables patient care from a team-based perspective (Johnson and Johnson Services Inc., 2016). Wolters Kluwer (2018) explains that the advantages of an interdisciplinary team include increased effective communication among healthcare staff and a sense of collaboration and teamwork.

Patient benefits include reducing healthcare-related expenditures, decreasing the overall length of stay, and lowering rates of hospital-acquired conditions. Patient-focused interdisciplinary teams are essential because they incorporate provider input from different disciplines and specialties. (Wolters Kluwer, 2018). Independent work relies on one single person's knowledge, whereas collaborating with a team enables the contribution of different members' knowledge.

An interprofessional team, composed of an interpretation services representative, a technical employee, and an administrative staff member, was assembled to provide the most effective intervention. A representative from CulturaLink, the professional interpretation services company used at the hospital, was recruited to provide detailed information about the services provided. The representative provided a resource guide with instructions on accessing remote interpretation via the iMobile Device. The representative also provided a language access quick reference guide, including the services available and a 24/7 customer service phone number. A hospital employed informational technology (IT) member was recruited to provide information on accessing language services through the iMobile device, a smartphone provided to staff members during their shifts for secure communication and coordination of patient care. The IT member was also responsible for providing a troubleshooting guide for the electronic devices utilized to access video and over-the-phone services. Lastly, the Director of Patient Safety and Risk Management was recruited as the hospital's point of contact. She also provided pre- and post-intervention data on the hospital's CulturaLink usage via iMobile devices.

3.3 Risk Management

A risk refers to anything that could potentially impact the project. Risk management refers to identifying, analyzing, and responding to any risk that arises during the project's life to help keep the project on track (Ray, 2021). Before project recruiting and implementation, a hospital and school affiliation agreement was secured to ensure hospital units allowed the project intervention. All unit directors were contacted and kept updated throughout the duration of the project. The hospital administration was also periodically updated, and a final presentation of project findings was presented. There were no foreseeable risks or discomfort for participation in the project. Participation was voluntary. Every effort was made to maintain the confidentiality of participants, but as with any data collection process, a potential risk of breach of confidentiality was present.

3.4 Organizational Approval

Project approval required a school affiliation agreement and contract execution prior to project implementation. The Clinical Education Operations Supervisor of the demographic area division was the point of contact between the school and the Hospital Corporation of America [HCA] Center for Clinical Advancement. The project was approved by Quality and the affiliation agreement and went into effect on October 14, 2022.

3.5 Information Technology

The project intervention utilized the hospital's existing resources. IMobile smartphones equipped with Mobile Heartbeat are the hospital's secure mobile communication platform (HCA Healthcare, 2022b). The iMobile smartphones are also equipped with the language services application, CulturaLink. The Information Technology Group (ITG) offers an array of services to help healthcare organizations improve patient care and business processes (HCA Healthcare, 2022b). ITG at the project's site was a vital contributor to the team and project intervention. The intervention included a hands-on demonstration on accessing and troubleshooting CulturaLink on the iMobile device. A hospital employed IT member provided the initial demonstration during a team meeting that the principal educator then replicated during each educational session.

3.6 Materials and Budget

Materials used for the project intervention were kept to a minimum. The iMobile device that was used in each of the educational sessions was provided by the hospital. Every unit has its own set of phones assigned to them. The principal investigator checked out an iMobile phone from her unit for each presentation. Participants were asked to bring their iMobile phones with them to the educational session for hands-on training. CulturaLink, the interpretation services company utilized at the hospital, is already embedded as an application on the iMobile device. Every hospital floor has an iPad that is utilized for video remote interpretation. A tablet was borrowed from a unit or house supervisor for each educational session.

Additional materials and costs came from advertising, presentation, and data-gathering materials. A personal computer and printer were used to create printed materials. Poster flyers and badge buddies required printer paper and colored ink. Educational handouts,

demographic sheets, consent forms, and questionnaires required printer paper and black ink. Badge buddies also required a laminator machine, a pair of scissors, and a badge-hole puncher. The laminator machine and badge hole puncher were borrowed from the principal investigator's unit. Participants received a folder with printed materials during the education session. Each folder held the consent form, demographic data sheet, and two questionnaires. The principal investigator's personal computer was used to send emails to participants who signed up for email notifications. A PowerPoint was created on the principal investigator's computer to ensure the same information was presented in all educational sessions. The PowerPoint was printed and used by the principal investigator at each session. Several reams of copy paper were used, and expenses came from purchasing paper, ink, and folders. The principal investigator purchased these supplies. Lastly, physical copies of all project data were stored in a locked filing cabinet purchased by the principal investigator.

3.7 Institutional Review Board

According to the United States Food and Drug Administration (FDA), the purpose of the Institutional Review Board (IRB) is to ensure proper steps are taken to protect the welfare and rights of human participants in research (FDA, 2019). The IRB has the power to approve, disapprove, or require modifications for research approval (FDA, 2019). The DNP project received IRB approval through Texas Wesleyan University on November 3, 2022. The approval had an expiration date of January 31, 2023, but an addendum for an expiration extension was submitted and approved through January 17, 2024. In addition, the hospital organization required a school affiliation agreement and student onboarding materials to be completed. The school affiliation agreement went into effect on October 14, 2022, with an expiration date of October 14, 2024.

3.8 Ethical Considerations

The principal investigator completed the Biomedical Research-Basic/Refresher program provided by the Collaborative Institutional Training Initiative (CITI) (see Appendix A). Participants were informed that participation was voluntary. Participants were required to sign a consent (see Appendix B) before receiving the education session. The consent form outlined the project's purpose, participants' responsibilities, possible risks and benefits, and alternatives to participation. The consent advised participants that they could withdraw from the project without penalty and that there was no compensation for participation.

3.9 Plan for Project Evaluation

3.9.1 Demographic Data

Demographics refers to the characteristics of a population (Lee & Schuele, 2010). Demographic data is necessary to determine whether the participants of a study are a representative sample of the target population for generalization purposes. Examples of demographic characteristics include race, ethnicity, age, gender, religion, education, income, sexual orientation, marital status, and health and disability status (Lee & Schuele, 2010). The demographic data (see Appendix C) collected for the DNP project included gender, age, years of nursing experience, highest educational level in nursing (diploma, associate, bachelor's, or graduate degree in nursing), and current employment status (full-time, part-time, PRN, or traveler). This data was collected with the initial pre-intervention questionnaires. It was a separate document, as demographic responses were also voluntary.

3.10 Intended Outcomes

The project's expected outcomes were to increase staff nurses' knowledge related to the use of interpretation services, decrease perceived barriers to use, and improve attitudes toward the use of interpretation services. The project aimed to demonstrate that by achieving these outcomes, staff nurses will increase their use of interpretation services when caring for LEP patients. For this DNP project, the following outcomes were developed.

Outcome 1: Immediately and 90 days after receiving an educational session, staff nurses will demonstrate increased knowledge related to the use of interpretation services, evidenced by increased scores on the knowledge assessment questionnaire.

Outcome 2: Immediately and 90 days after receiving an educational session on how to access different modes of interpretation services, staff nurses will demonstrate a decrease in perceived barriers to use, evidenced by the responses on the attitude questionnaire.

Outcome 3: Immediately and 90 days after receiving an educational session, staff nurses will demonstrate an improvement in attitude toward using interpretation services.

3.11 Measurement Tools

Outcome measures were measured using an attitude questionnaire (see Appendix D) on a four-point Likert scale and a knowledge questionnaire (see Appendix E). The original questionnaires were created by Ferral

and Meyer (2017), and permission to use was obtained via email (see Appendix F). With permission, both questionnaires were modified to be more applicable to the project and compliant with current hospital policy. The knowledge questionnaire modifications were reviewed and approved by the hospital's Director of Patient Safety and Risk Management for validity. The original study found to have a Cronbach's alpha for reliability of 0.71, which was an acceptable value for reliability (Ferral & Meyer, 2017).

3.12 Data Management

Participants were assigned a number on the day of the educational intervention. They were asked to fill out their demographic form and questionnaires using that identifying number. All physical forms were scanned to a password-protected Microsoft OneDrive folder on the principal investigator's personal computer. A password-protected Excel spreadsheet was created to organize participant responses and demographic data. The computer utilized is also password protected for login and the password is only known to the principal investigator. Physical forms are kept in a locked filing cabinet in the principal investigator's home office. All data will be stored for a three-year period following the project and then will be properly destroyed.

3.13 Setting

The project took place in a 267-bed, full-service hospital in the Southeastern United States (Hospital Corporation of America [HCA] Healthcare, 2020a). The hospital serves three counties with a combined population of 487,322 (United States Census Bureau, 2021a, 2021b, 2021c). In the county where the hospital is located, a reported 11.7% of the population ages five and older, speak a language other than English at home (United States Census Bureau, 2021a). It is important to note that the setting for the project is the only full-service acute care hospital and level II Trauma Center for the surrounding counties (HCA Healthcare, 2020a). It offers the area's only Joint Commission Accredited Advanced Primary Stroke Center, Accredited Chest Pain Center, Comprehensive Cardiovascular Program, Certified Cancer Center, Level II Neonatal Intensive 3 Care Unit, Acute Inpatient Rehabilitation Unit, and Adult Inpatient Behavioral Health Center (HCA Healthcare, 2020a). Additional specialty services offered at the hospital include neurological care, orthopedic care, gastroenterology, intensive care unit (ICU), women's care, spine care, surgical services, imaging services, and diagnostics and laboratory (HCA Florida Healthcare, 2022a). The intervention took take place in four hospital units: surgical services (Outpatient, Operating Room [OR], Post Anesthesia Care Unit [PACU]), medical-surgical (med-surg), labor and delivery (L&D), and emergency room (ER).

3.14 Population

Staff nurses from the four hospital units were recruited. The population inclusion criteria included being a registered nurse, working in one of the four intervention units, and having provided direct patient care to a LEP patient in the last 12 months. The target participation was 10 staff nurses per unit for a total of 40 staff nurses. The only exclusion criterion was the inability to complete all three sets of questionnaires. For example, if a nurse was no longer employed when the post-intervention questionnaire was administered 3 months after the educational session, that nurse was excluded from the results. Travel nurses whose contracts were within the 3-month period were allowed to participate.

3.15 Planned Implementation

The project was mentioned in each of the intervention unit's morning huddles. The principal investigator attended each huddle to briefly introduce the project. Recruitment flyers (see Appendix G) were posted on the intervention units, and a sign-up sheet was left at each charge desk with the date and times of each of the four educational sessions. Email reminders to all those who signed up ahead were sent before each session, but any staff nurse could show up the day of each session and participate.

Participants participated in an educational in-service session that consisted of an overview of the importance of using interpretation services and the hospital's current LEP policy. A copy of the hospital's Accommodating Persons with Limited English Proficiency Policy review (see Appendix H) and The Joint Commission's Quick Safety Issue 13 (see Appendix I) were distributed as educational handouts. Participants were asked to fill out a consent form, demographics sheet, and the knowledge and attitude questionnaires using their identifying number before the educational session began. The same knowledge and attitude questionnaires were filled out immediately after the educational session and 3 months after the session. Participants received hands-on training on accessing, using, and troubleshooting different delivery modes of language services using the hospital's assigned iMobile smartphone. Every unit has their own set of phones assigned and nurses are required to check out an iMobile device at the start of their shift and return it at the end of the shift. Participants were asked to bring their iMobile

phones with them to the educational session for hands-on training. CulturaLink, the interpretation services company utilized at the hospital, is already embedded as an application on the iMobile device. An iPad tablet was borrowed from a unit or house supervisor for each educational session to review remote video interpretation. Two badge buddies (see Appendix J and Appendix K) were distributed after each educational session. The badge buddies provide an easy reminder on how to access the services discussed. Participants were provided with the principal investigator's contact information and were welcome to email or call to request a follow-up if any questions arose during the project timeframe. Participants were also given the option to meet with the principal investigator 45 days after the educational in-service to answer any new questions, reinforce education received, and/or review hands-on training. The 90-day post-intervention questionnaires were emailed to those who requested it and all others were handed out and collected individually.

3.16 Variations

The initial target participation was 10 staff nurses per unit. Educational sessions were scheduled in advance with each unit director. On the day of the intervention for the L&D unit, there were several mothers in labor, and only three nurses participated from that unit. Additionally, only one educational session was initially scheduled for the surgical care (med-surg) unit, but on the morning of the intervention, only five staff nurses were working in the unit. With the permission of the unit director, a second educational session was presented to the evening staff on the same day to ensure target participation. The educational session for the ER was conducted during an evening scheduled monthly staff meeting. Nurses from varying shifts participated. The collection of post 90-day questionnaires proved difficult as there were staff nurses from day and night shifts that participated from two of the units. Multiple visits to each unit during varying times of the day were required to secure collection of questionnaires.

Project planning and evaluation are critical steps in the accomplishment of a project. Careful planning is required to ensure the project remains on course. Project planning was essential in creating an interdisciplinary team focused on providing a successful intervention and gaining approval for project implementation. The plan for evaluation was equally as important because it outlined intended outcomes, implementation, and measurement tools to be utilized.

4. Evaluation and Outcomes of the Doctor of Nursing Practice Scholarly Project

Data collection and analysis is critical in the research process. Data analysis is the process of examining raw data to draw a conclusion about that information (Bhatia, 2017). Data analysis can enhance patient care by discovering improved ways to manage resources and personnel (Bhatia, 2017). This chapter details the evaluation and outcomes of this DNP project.

4.1 Data Analysis and Measurement of Outcomes

A password-protected Excel spreadsheet was created to organize participant responses and demographic data. The data was uploaded onto Intellectus Software for data analysis. The knowledge questionnaire contained 5 questions, and mean scores for pre-intervention, immediate post-intervention, and 90 days post-intervention scores were compared. Mean scores were calculated based on questions answered correctly: 5/5=100%, 4/5=80%, 3/5=60%, 2/5=40%, and 1/5=20%. Questions that were "select all that apply" required all correct answers to be selected to be counted as correct; no partial credit was given. For data analysis purposes, the percentages of questions answered correctly were converted to decimals. The Likert scale responses in the attitude questionnaire were assigned a numerical value: strongly agree=4, agree=3, disagree=2, strongly disagree=1. Because the questions were negatively worded, reverse coding was applied for data analysis. Reverse coding reassigned numerical values as strongly agree=1, agree=2, disagree=3, strongly disagree=4. A mean average score of 4 indicated that all questions were answered as strongly disagree.

4.2 Knowledge Questionnaire Data Analysis

To examine if there is a significant difference in nurses' knowledge pre-intervention vs. immediate post-intervention vs. 90 days post-intervention a repeated-measures analysis of variance (ANOVA) was conducted. The repeated measures ANOVA is used to test the effects of a continuous dependent variable measured over time. The continuous dependent variable of the analysis was nurses' knowledge, measured 3 times. The Null Hypothesis (H0) was: there is no significant difference in nurses' knowledge pre-intervention vs. immediate post-intervention vs. 90 days post-intervention. The Alternative Hypothesis (H1) was: that there is a significant difference in nurses' knowledge pre-intervention vs. immediate post-intervention vs. 90 days post-intervention

The assumptions of normality, absence of multivariate

outliers, and sphericity were assessed. The normality assumption requires that the residuals of the repeated measures ANOVA follow a normal distribution (a bell-shaped curve). Normality was assessed graphically using a Q-Q scatterplot (Field, 2017; Bates et al., 2014; DeCarlo, 1997). Multivariate outliers were determined by calculating Mahalanobis distances on the residuals (Newton & Rudestam, 2012) and comparing the distances to the .999 quantile of a χ^2-distribution with the degrees of freedom being n-1, where n is the number of measurements conducted on the dependent variable. Sphericity requires that the mean differences between each pair of combinations of the measurements over time must have equal variance. Mauchly's test for sphericity was conducted to examine this assumption (Mauchly, 1940; Field, 2017). If the assumption of sphericity is violated ($p <$ .05), Greenhouse-Geisser corrections is used to adjust for the violation of sphericity (Greenhouse & Geisser, 1959).

4.3 Attitude's Questionnaire Data Analysis

A dependent sample *t*-test was conducted to examine if there was a statistically significant difference in nurses' attitudes pre-intervention and 90 days post-intervention. The Null Hypothesis (H_0) was: that there is no statistically significant difference in nurses' attitudes pre-intervention and 90 days post-intervention. The Alternative Hypothesis (H_1) was: that there is a statistically significant difference in nurses' attitudes pre-intervention and 90 days post-intervention.

A dependent sample *t*-test for paired means is an appropriate statistical analysis if each of the two samples can be matched on a particular characteristic or to examine the effects of a given measurement over time.

The assumptions of normality and homogeneity of variance were assessed. The dependent samples test of correlated mean differences assumes a normal distribution or a curve that is bell-shaped and symmetrical. The assumption of normality was examined with a one-sample Shapiro-Wilk test (Razali & Wah, 2011). The paired samples *t*-test also assumes homogeneity of variances on the difference between both samples. To test this assumption, Levene's test for equality of variance was conducted (Levene, 1960). The *t*-test was two-tailed, with the probability of rejecting the null hypothesis when it is true set at $p < 0.05$. This ensures a 95% certainty that the differences did not occur by chance.

4.4 Response Rate, Sample Size, and Demographics

Originally 52 nurses consented for participation. Seven nurses did not complete all the post-intervention questionnaires and were removed from the sample population. The sample population for this DNP project was 45 nurses. Staff nurses from four hospital units participated in the project. Nine nurses from the surgical care unit, 22 nurses from the surgical services unit, three nurses from L&D, and 11 nurses from the ER participated. Table 1 displays the participant sociodemographic data collected.

Table 1. *Sociodemographic Characteristics of Participants*

Characteristic	Sample population	
	n	%
Gender		
Female	38	84.44
Male	6	13.33
Other	1	2.22
Age		
20-29 years old	10	22.22
30-39 years old	10	22.22
40-49 years old	13	28.89
50-59 years old	10	22.22
60+ years old	2	4.44
Nursing experience		
Less than 1 year	2	4.44
1-5 years	16	35.56
6-10 years	7	15.56
11-20 years	11	24.44

20+ years	9	20
Highest educational level in nursing		
Diploma	0	0
Associate Degree	22	48.89
Bachelor's Degree	22	48.89
Graduate Degree	1	2.22
Employment status		
PRN	6	13.33
Part-time	2	4.44
Full-time	36	80
Traveler	1	2.22

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

4.5 Findings

4.5.1 Repeated Measures ANOVA on Staff Nurses' Knowledge

A repeated measures analysis of variance (ANOVA) with one within-subjects factor was conducted to determine whether significant differences exist among staff nurses' knowledge pre-intervention, immediate post-intervention, and 90 days post-intervention.

4.6 Assumptions

The assumption of normality was assessed by plotting the quantiles of the model residuals against the quantiles of a Chi-square distribution, also called a Q-Q scatterplot (DeCarlo, 1997). For the assumption of normality to be met, the quantiles of the residuals must not strongly deviate from the theoretical quantiles. Strong deviations could indicate that the parameter estimates are unreliable. Figure 1 presents a Q-Q scatterplot of model residuals. Mauchly's test was used to assess the assumption of sphericity (Field, 2017; Mauchly, 1940). The results showed that the variances of difference scores between repeated measurements were significantly different from one another based on an alpha of .05, $p < .001$, indicating that the sphericity assumption was violated. To identify influential points in the residuals, Mahalanobis distances were calculated and compared to a χ^2 distribution (Newton & Rudestam, 2012). An outlier was defined as any Mahalanobis distance that exceeds 16.27, the 0.999 quantiles of a χ^2 distribution with 3 degrees of freedom (Kline, 2015). There were no outliers detected in the model.

4.7 Results

The results were examined based on an alpha of .05. The *p*-values for the within-subjects factor and the interactions with the within-subjects factor were calculated using the Greenhouse-Geisser correction to adjust for the violation of the sphericity assumption. According to Greenhouse and Geisser (1959), this is the appropriate way to adjust for violations of the sphericity assumption. The main effect for the within-subjects factor was significant, $F(2, 88) = 70.34$, $p < .001$, indicating significant differences between the values of pre-intervention, immediate post-intervention, and 90 days post-intervention. Table 2 presents the ANOVA results. The means of the within-subjects factor are presented in Table 3. Figure 2 displays the boxplots of knowledge pre-intervention, immediate post-intervention, and 90 days post-intervention. The mean knowledge score pre-intervention was 62%, the mean knowledge score immediately post-intervention was 91%, and the mean score 90 days post-intervention was also 91%.

These findings demonstrate a significant difference in staff nurses' knowledge pre-intervention compared to immediate post and 90 days post-intervention. Staff nurses displayed increased knowledge related to the use of interpretation services, evidenced by increased scores on the knowledge assessment questionnaire immediately post-intervention. Furthermore, the knowledge was retained, evidenced by the increased knowledge scores 90 days post-intervention.

Table 2. *Repeated Measures ANOVA Results*

Source	df	SS	MS	F	p	η_p^2
Within-Subjects						
Within Factor	2	2.54	1.27	70.34	< .001	0.62
Residuals	88	1.59	0.02			

Note. Degrees of freedom (df), Sum of squares (SS), Mean square (MS), F-ratio (F), p-value (p), and Partial Eta-squared(η_p^2)

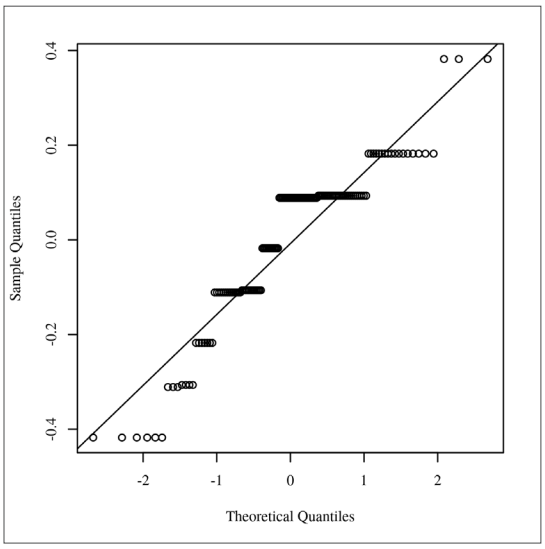

Figure 1. *Q-Q scatterplot for normality of the residuals for the regression model.*

Table 3. *Means Table for Within-Subject Variables*

Variable	M	SD
Pre-intervention	0.62	0.23
Immediate post-intervention	0.91	0.13
90 days post-intervention	0.91	0.12

Note. n= 45. Mean (M), and Standard deviation (SD).

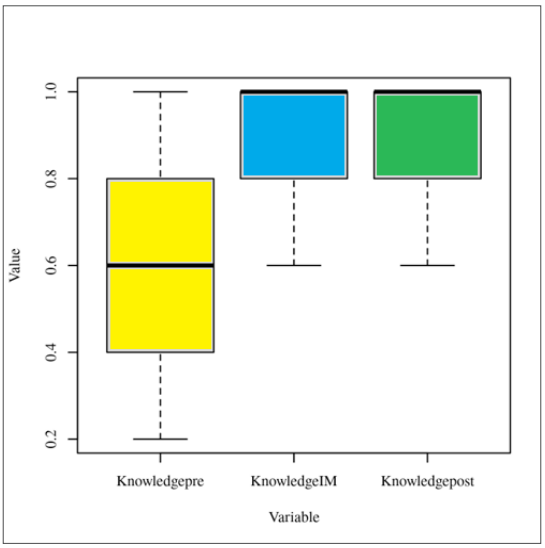

Figure 2. *Boxplots of knowledge pre-intervention, immediate post-intervention, and 90 days post-intervention*

4.8 Two-Tailed Paired Samples t-Test on Staff Nurses' Attitude

A two-tailed paired samples *t*-test was conducted to examine whether the mean difference between staff nurses' attitudes pre-intervention and staff nurses' attitudes 90 days post-intervention was significantly different from zero. A Shapiro-Wilk test was conducted to determine whether the differences in attitudes pre-intervention and attitudes 90 days post-intervention could have been produced by a normal distribution (Razali & Wah, 2011). The results of the Shapiro-Wilk test were significant based on an alpha value of .05, $W = 0.91$, $p = .003$. This result suggests that the differences in attitude pre-intervention and attitude 90 days post-intervention are unlikely to have been produced by a normal distribution, indicating the normality assumption is violated.

4.9 Results

The two-tailed paired samples t-test result was significant based on an alpha value of .05, $t(44) = -5.27$, $p < .001$, indicating the null hypothesis can be rejected. This finding suggests that the difference in the mean of attitudes pre-intervention and the mean of attitude 90 days post-intervention was significantly different from zero. The mean of attitude pre-intervention was

significantly lower than the mean of attitudes 90 days post-intervention. The results are presented in Table 4. A bar plot of the means is presented in Figure 3.

Table 4. *Two-Tailed Paired Samples t-Test for the Difference Between staff nurses attitudes pre-intervention and attitudes 90 days post-intervention*

Attitude Pre-intervention		Attitude 90 days Post-intervention				
M	*SD*	*M*	*SD*	*t*	*p*	*d*
2.99	0.42	3.33	0.42	-5.27	< .001	0.79

Note. N = 45. Degrees of Freedom for the *t*-statistic = 44. *d* represents Cohen's *d.* Mean (M), and Standard deviation (SD).

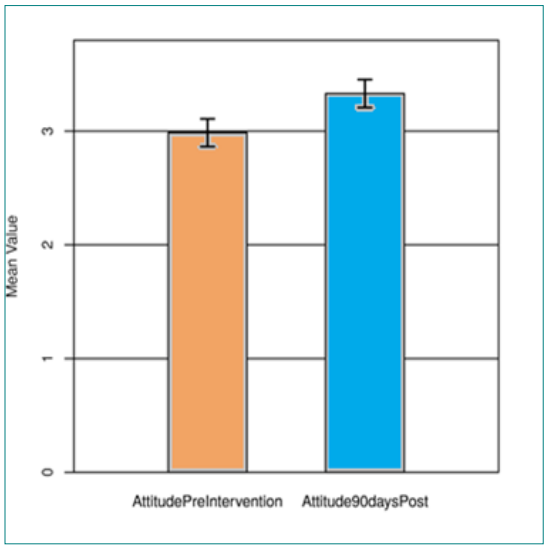

Figure 3. *The means of attitude pre-intervention and attitude 90 days post-intervention with 95.00% CI Error Bars*

4.10 Two-Tailed Wilcoxon Signed Rank Test

Due to the normality assumption being violated, a two-tailed Wilcoxon signed-rank test was conducted to further examine whether there was a significant difference between staff nurses' attitudes pre-intervention and attitudes 90 days post-intervention. The two-tailed Wilcoxon signed rank test is a non-parametric alternative to the paired samples *t*-test and does not share its distributional assumptions (Conover & Iman, 1981).

4.11 Results

The two-tailed Wilcoxon signed rank test results were significant based on an alpha value of .05, V = 53.00, z = -4.52, p < .001. This indicates that the differences between attitudes pre-intervention and attitudes 90 days post-intervention are not likely due to random variation. The median of attitudes pre-intervention (Mdn = 3.00) was significantly lower than the median of attitudes 90 days post-intervention (Mdn = 3.25). Figure 4 presents a boxplot of the ranked values of

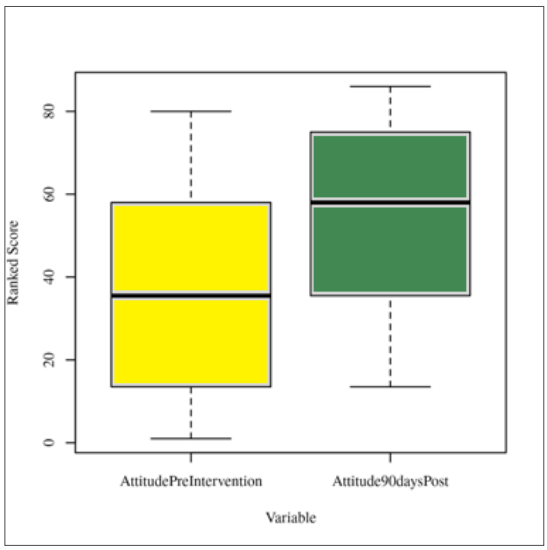

Figure 4. *Ranked values of attitudes pre-intervention and attitudes 90 days post-intervention*

attitudes pre-intervention and attitudes 90 days post-intervention.

Results indicate that staff nurses' attitudes toward using interpretation services improved after the educational session. Additionally, 90 days after receiving the educational session on accessing different modes of interpretation services, staff nurses demonstrated a decrease in perceived access barriers to use, evidenced by the responses to questions # 2-5 on the attitude questionnaire. Post 90 days after the intervention, all participants disagreed or strongly disagreed with the statements "I do NOT know how to access a professional interpreter when necessary" and "I prefer to use family members or friends to interpret for LEP patients because I am dissatisfied with interpreter service availability at my primary place of practice." Furthermore, pre-intervention, 13 participants agreed that "using professional interpretation services is difficult," whereas only two participants agreed 90 days post-intervention. Table 5 and Table 6 display staff nurses' responses to attitude questionnaire questions two through five.

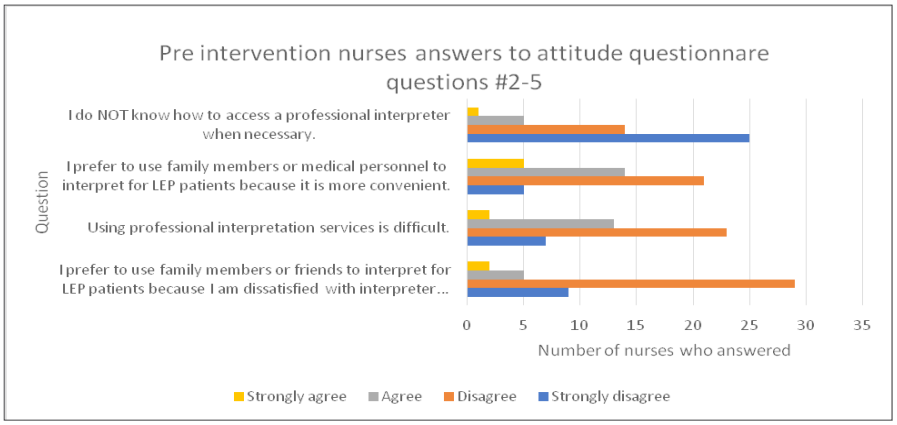

Table 5. *Pre-intervention staff nurses' attitudes questionnaire responses to questions #2-5*

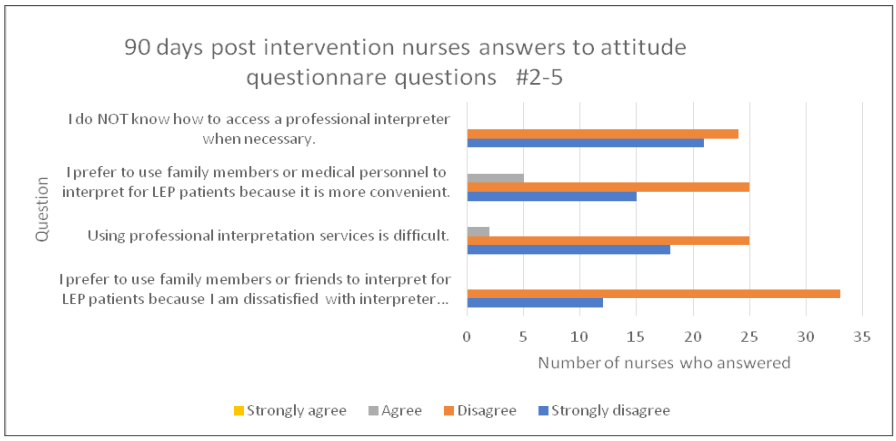

Table 6. *90 days post-intervention staff nurses' attitudes questionnaire responses to questions #2-5*

Language barriers impact the healthcare of LEP patients. Effective communication is necessary for patient understanding and compliance. The use of interpretation services supports effective communication and allows LEP patients to receive care in the language they understand. Nurses play a vital role in patient communication and may benefit from an educational intervention to increase their knowledge and use of these essential services. The data analysis and findings outlined in this chapter show that providing an educational session to nurses that reinforces the evidence-based practice of offering and using interpretation services when caring for LEP patients can help improve their knowledge and attitudes.

5. Implications and Limitations of the DNP Scholarly Project

Discussing the implications and limitations of project findings is an important aspect of the DNP scholarly project. Statistic Solutions (2023) explains that discussing implications requires interpreting the project findings to discuss what those findings mean in the field of study. This chapter examines the project's implications and limitations.

5.1 Findings and Results

The project outcomes were met. Staff nurses increased their knowledge related to the use of interpretation services. Results showed that the mean knowledge

score pre-intervention was 62%, the mean knowledge score immediately post-intervention was 91%, and the mean score 90 days post-intervention was also 91%. Staff nurses displayed increased knowledge immediately post-intervention and retained that knowledge 90 days post-intervention. Additionally, staff nurses improved their attitudes toward the use of interpretation services. The attitude questionnaire statements were negatively worded, and responses of "disagree" and "strongly disagree" were interpreted as positive answers. Reverse coding was applied for data analysis, meaning an average score of 4 indicated that all questions were answered as "strongly disagree." Results showed that the mean attitude score pre-intervention was 2.99, and the mean attitude score 90 days post-intervention was 3.33. Due to the normality assumption being violated in the two-tailed paired t-test, a non-parametric alternative, a two-tailed Wilcoxon signed-rank test, was also conducted to examine further whether there was a significant difference between staff nurses' attitudes pre-intervention and attitudes 90 days post-intervention. Results showed that the median attitude score pre-intervention was 3.00, significantly lower than the median attitude score 90 days post-intervention of 3.25. This demonstrates that staff nurses' attitudes toward using interpretation services improved after the project intervention. Lastly, staff nurses displayed a decrease in barriers to use. One of the project's aims was to decrease barriers to use by improving attitudes. Statements two through five on the attitude questionnaire focused on barriers to use. Results showed that 90 days post-intervention, no staff nurse answered "strongly agree" to any of the questions, and there was a noticeable decrease in "agree" answers, indicating a positive change in attitudes.

5.2 Theoretical Implications

Culture Care Theory (Leininger, 1991) underlines recognizing and understanding a patient's culture to influence nursing care. Project findings demonstrated increased nurses' knowledge related to the use of interpretation services. Increasing nurses' knowledge of situations that require an interpreter, who can be used as an interpreter, when it is appropriate to use a friend or family member as an interpreter, and overall knowledge of why interpretation services are used and the difference in outcomes when compared to English proficient patients, all align with the application of Culture Care Theory. Culturally congruent nursing care that emphasis understanding a patient's view of illness can only be accomplished when a patient can effectively communicate with their healthcare team.

5.3 Significance to Practice Setting

Research has shown that using qualified interpreters improves LEP patient care, including increased patient-provider communication, patient satisfaction, safety, quality of care, and health outcomes (Fox et al., 2020). It is imperative that nurses recognize when interpretation services are needed, and they must be knowledgeable about accessing those services. The project findings demonstrate that an educational session can significantly affect nurses' knowledge and attitudes. An educational session can be incorporated into practice as part of continuing nursing education.

5.4 Project strengths and limitations

A strength of the project is that the intended outcomes were met. The results were significant, and the project intervention proved to be effective. Staff nurses significantly improved their knowledge and attitudes toward using interpretation services. Unfortunately, a limitation of the project is that data on nurses' use of interpretation services pre- and post-intervention was not analyzed. The project site could not generate data that detailed interpretation services usage in the months before and after the intervention. It is unclear if improved knowledge and attitudes increased staff nurses' usage of interpretation services. Additionally, the project intervention took place in four hospital units. A limitation is that the project excluded hospital units including the behavioral health unit and intensive care unit (ICU). The target participation was 10 staff nurses per unit for a total of 40 staff nurses. Another limitation is that participation was not equal throughout all units. Nine nurses from the surgical care unit, 22 nurses from the surgical services unit, three nurses from L&D, and 11 nurses from the ER participated. On the day of the intervention in the L&D unit, there were several laboring mothers, and only three nurses could participate.

5.5 Implications for Practice, Healthcare, and Policy

This project's results indicate a need for further education on using interpretation services. Education could begin in nursing school by teaching Madeleine Leininger's Culture Care Theory and its alignment with the use of interpretation services. Hospitals may adopt new policies such as new hire training that includes learning how and when to use interpretation services and a required yearly physical check-off on accessing interpretation services. Additionally, individual units may review interpretation services periodically during staff meetings. Nurses can advocate for a policy in their facility to make education on interpretation services part of the onboarding process and an annual competency training requirement.

5.6 Suggestions for Sustainability

Project sustainability requires both individual and organizational obligations to safeguard that outputs, outcomes, and benefits are sustainable during their creation, disposal, decommissioning, and over life cycles (Association for Project Management, 2022). Sustainability involves balancing four elements: society, environment, economy, and administration (Association for Project Management, 2022). The sustainability of this project can be accomplished with the combined efforts of hospitals and nursing staff. Hospitals must be willing to provide nurses with additional support and resources for continuing education on interpretation services, and nurses must be willing to continue learning.

5.7 Plan for Dissemination

Dissemination refers to the process of sharing research findings with audiences (Agency for Healthcare Research and Quality [AHRQ], 2014). To ensure that project findings will be utilized, it is important to develop a dissemination plan that outlines how the project will be shared with relevant institutions, stakeholders, organizations, and individuals (AHRQ, 2014). The project findings will be shared with fellow classmates, faculty, and alums of Texas Wesleyan University. A PowerPoint presentation will be presented to classmates and faculty, and a poster will be displayed to share findings with alumni and family. Additionally, project findings will be shared with stakeholders through a tri-fold poster board presentation. The same posterboard presentation will be presented to participating hospital units. Lastly, publishing the project's manuscript is essential for disseminating knowledge. The project data has been stored for possible future submission for publication.

5.8 Future Projects

The project's findings provide the groundwork for many possible future projects. This project failed to analyze if staff nurses increased their use of interpretation services post-intervention. Additionally, this project did not associate demographic data with findings. Future projects could analyze if age, level of nursing education, years of experience, and employment status affect nurses' knowledge and attitude toward the use of interpretation services. Furthermore, this project limited participation to nurses only. Future projects could include all healthcare providers, including but not limited to patient care techs, doctors, nurse practitioners, physician assistants, physical therapists, occupational therapists, and speech therapists. Lastly, future projects could expand the project timeline and analyze results six months to a year post-intervention to examine if there is a significant difference in knowledge and attitudes over an extended period.

In conclusion, the dissemination of project findings is critical for future projects. There is a need for nursing education on the use of interpretation services, and the project implications and limitations discussed in this chapter provide guidance for future work. The project findings were significant, but there is room for improvement. Future projects can examine larger populations over an extended time frame.

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