Using the "Teach-Back" Education Method with Type II Diabetic Patients and Health Literacy: An Integrative Review

A Scholarly Project

Submitted to the

Faculty of Liberty University

In partial fulfillment of

The requirements for the degree

Of Doctor of Nursing Practice

By

Sonia Romero

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Scholarly Project Chair Approval:

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ABSTRACT

Effective communication provides healthcare providers and patients an opportunity to address issues or concerns. Effective communication is linked to improving patient outcomes. Patients with low health literacy are unable to understand, read, comprehend, or discuss the information provided by their healthcare providers. Poor health literacy directly affects disease management and leads to poor patient outcomes. The increase rate of obesity worldwide has quadrupled, the unhealthy lifestyle is one of the risk factors causing adults to develop Type II Diabetes Mellitus (T2DM). T2DM is a condition in where the pancreas does not produce sufficient insulin to absorb the glucose consumed. T2DM can be prevented or controlled with proper management of the disease along with lifestyle changes. The purpose of the project is to identify if the use of the teach-back education method with Type II diabetic patients and health literacy can improve education, communication, and patient outcomes. An analysis of the literature further supports the need to communicate effectively with patients who have T2DM and poor health literacy.

Keywords: Type II diabetes complications, discharge instructions, effective communication, health literacy, diabetes education, and teach-back method.

Dedication

I would like to dedicate this scholarly project to my husband Rick and my children Victoria, Ricardo, Christopher, and Stephanie. Their love, support, and encouragement have provided me with the strength to further my education in nursing. Rick, thank you for always staying positive and using words of encouragement to get me through this. To my loving children, each of you has inspired and motivated me to succeed. Everything that I have accomplished is because of your love and support. I could not have done this without your help. You were always in the background, helping me through this. I am blessed to have an awesome family that God put in my life to make it meaningful. I love you more than words can express, and I share this accomplishment and the successful completion of this journey with each of you.

Acknowledgments

I would like to sincerely thank my project chair, Dr. Sharon Kopis. I am grateful for her wisdom, continuous support, and encouragement throughout this process. I was blessed to have a compassionate and caring mentor who guided me and made it possible to reach my goal. I am genuinely grateful to have the opportunity to learn from you, and for that, I will always be grateful.

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List of Abbreviations

Doctor of Nursing Practice (DNP)

Institutional Review Board (IRB)

Integrated Review (IR)

Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA)

Type II Diabetes (T2D)

Type II Diabetes Mellitus (T2DM)

SECTION ONE: FORMULATING THE REVIEW QUESTION

Introduction

Effective communication between patients and healthcare providers is correlated with positive patient outcomes. It is estimated that nearly 80% of information given to patients by their healthcare providers is forgotten, and the information that is recalled by the patients is inaccurate (AHRQ, 2021). Change in practice can improve patient understanding of Type II Diabetes (T2D) and improve patient outcomes. It is vital to communicate effectively with patients to decrease problems associated with diabetic management and to improve patient outcomes. The teach-back education method allows healthcare providers to assess the patients' understanding of the information provided and correct patients' misunderstanding of information (Na et al., 2021).

Problem Statement

This integrative review (IR) will address the following clinical statement: In adult patients with T2D does the use of the "teach-back" education method and health literacy improve patient outcomes?

Defining Concepts and Variables

The concepts and variables play an essential role in the IR project as the topic must stimulate interest and provide meaningful knowledge to the reviewer and those in the healthcare profession (Toronto & Remington, 2020). Effective communication and disease management of T2DM with patients who have poor health literacy are important to this reviewer to understand as many people suffer from this preventable disease. Describing the variables and how they were utilized in the IR project decreases ambiguity (Toronto & Remington, 2020). The concept identified for this IR project addresses the following question: Does the use of the teach-back

education method with Type II diabetic patients and health literacy improve patient outcomes? Additionally, will the use of this method decrease healthcare costs, morbidity rates, and diabetic complications? The operational definition describes the concept based on observable and measurable terms used in the IR project (Toronto & Remington, 2020). Health literacy is conceptually defined as the ability to assess, understand, evaluate, and apply information (Zhang et al., 2021). Poor health literacy is operationally defined for this IR project as the result of a person who is unable to understand, read, comprehend, or discuss the information provided by healthcare providers. The teach-back method is conceptually defined as an evidence-based communication method to improve communication and patient health outcomes (Antrum et al., 2019). The teach-back method is operationally defined for this IR project as a communication technique to assist the healthcare providers in communicating effectively with their patients and to assess the effectiveness of the patients' understanding of the information provided.

Rationale for Conducting the Review

According to Nas et al., (2021), more than half of patients have a lack of knowledge in diabetic management. Patients who have a decreased understanding and poor health literacy are at higher risk of developing complications with T2D. Nurses provide a vast amount of discharge instructions to the patient prior to discharge. According to a report from the Agency for Healthcare Research and Quality (AHRQ) (2021), 80% of the information that patients receive from their healthcare providers is immediately forgotten, and the information retained is often inaccurate. Healthcare providers provide education and discharge instructions to the patients; however, the communication is one-sided, as questions asked are often closed-ended questions, leaving patients with uncertainty regarding what was discussed. The use of the teach-back

education method and health literacy has been shown to improve patient understanding of disease management, knowledge, and information provided, thus improving patient outcomes.

Purpose and/or Review Question(s)

This project aims to review the literature regarding the use of the teach-back method and health literacy published between 2016-2021 to determine if there is an association between the teach-back method and health literacy in improving patient outcomes on adult patients with T2D. According to Nas et al. (2021), patients have insufficient knowledge regarding the obstacles associated with diabetes management. It is estimated that less than 50% of diabetic patients have successfully managed their diabetes, and over half of the patients' poor diabetic management is caused by a lack of knowledge, skills, and motivation (Nas et al., 2021). The teach-back method allows healthcare providers to interact with patients to teach and assess patient understanding of the information provided by asking the patients to repeat the information given using their own words. This method has allowed healthcare providers to reinforce, clarify, and confirm the patients' understanding (Nas et al., 2021).

The use of health literacy has provided healthcare professionals with further information on their patients' educational needs. Health literacy can directly impact the patients' self-care and self-efficacy (Cutler, 2018). Low health literacy leads to poor patient outcomes due to ineffective self-management, decision-making skills, and problem-solving skills in diabetes management (Kim & Lee, 2016).

Clinical Question

In adult patients with T2D, does the use of the "teach-back" method of education and health literacy improve patient outcomes?

Formulate Inclusion and Exclusion Criteria

The literature review was performed with the use of multiple databases, from which the project leader selected articles published within the last five years. The databases utilized for the scholarly project included the Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, and Medline. EBSCO host was used as the search engine for the databases. The keywords include the following: T2D complications, discharge instructions, effective communication, health literacy, diabetes education, and teach-back method.

An initial review of the literature was conducted using the levels of evidence and the Melnyk framework. This review was insufficient and revealed that an additional literature review was needed. In the initial literature review, there were 8,707 articles available for review, which were briefly reviewed and excluded due to not correlating with the current scholarly project. There were 21 articles reviewed using the Melnyk framework, and 18 of those articles were of interest; these addressed issues with diabetic education, the teach-back method, diabetes, health literacy, and improving patient outcomes. The initial literature review included systematic reviews, cohort studies, qualitative studies, case-control studies, meta-analysis, retrospective analysis, quasi-experimental research design, and pilot studies. The initial review included two: level-one articles, three: level-two articles, three: level-three articles, seven: level-four articles, one: level-five article, and two: level-six articles.

Conceptual Framework

The Whittemore and Knafl (2005) conceptual framework has guided this IR scholarly project. The conceptual framework by Whittemore and Knafl (2005) allowed for the inclusion of current information and past research to address the clinical question. The conceptual framework consists of five steps that guided the IR scholarly project. Whittemore and Knafl's (2005)

conceptual framework has five steps, which include: identifying the problem, searching the literature, evaluating the data, analyzing the data, and presenting the results.

The conceptual framework was used to identify the problem and population for this IR project. Then a search of the literature was completed and identified the search methods that were utilized in the IR project, which included the following databases: CINAHL, PubMed, and Medline. An evaluation of the data was conducted utilizing the Melnyk framework. Once the data was collected, it was analyzed for inclusion or exclusion in the IR, and the findings of the research results were collected and presented in this IR.

SECTION TWO: COMPREHENSIVE AND SYSTEMATIC SEARCH

Search Organization and Reporting Strategies

Resources for the IR were obtained using a systematic approach utilizing the following databases: CINAHL, PubMed, and Medline. The initial scholarly articles were collected from EBSCO host and were published within the last five years from 2016-2021. The keywords used for the IR were T2D complications, discharge instructions, effective communication, health literacy, diabetes education, and teach-back method. An essential step in selecting the research articles is screening the information based on the study selection, which involves reviewing the search citation and selecting relevant articles with full-text retrieval (Toronto & Remington, 2020). The inclusion criteria consisted of articles published within the last five years from 2016-2021, peer-reviewed articles, adult patients diagnosed with T2D, articles written in English, T2D complications, teach-back method, health literacy, and diabetic education. The exclusion criteria consisted of book reviews, personal communication, news articles, webinars, adolescents with T2D, gestational diabetes, and Type I diabetes.

Terminology

There are many different meanings to terminology based on the different disciplines (Toronto & Remington, 2020). *Platform* is the software that is used by a database provider (Toronto & Remington, 2020). *Database* is an electronic resource with searchable terms of publications (Toronto & Remington, 2020). *Search interface* is a search page that has searchable fields which include basic and advanced searches with limiters (Toronto & Remington, 2020).

SECTION THREE: MANAGING THE COLLECTED DATA

The scholarly research articles were selected based on a search conducted within the last five years from 2016-2021. The information included in this IR scholarly project included supporting material regarding the clinical question, "Does the use of the teach-back education method with Type II diabetic patients and health literacy improve patient outcomes?" A robust literature review was conducted to review and analyze the research data based on the inclusion criteria for this IR project.

Toronto and Remington (2020) provided guidelines for the collection of information, which included determining the eligibility or inclusion/exclusion criteria, examining articles for duplication and excluding titles with irrelevant information, reviewing abstracts, and finding citations with full-text screening. Once the citations were determined to be included or excluded, this information was documented.

SECTION FOUR: QUALITY APPRAISAL

Sources of Bias

The integrated review consisted of conducting a literature review and gathering information regarding the use of the teach-back education method and health literacy. It is imperative to focus on the clinical question and the omission and inclusion criteria to prevent

bias. The literature review must maintain rigor in conducting reliable methods and identifying whether to include the information for the integrative review. According to Polit & Beck (2012), data tracking for the integrated review is essential to support reproducibility. The literature review consisted of different types of studies, and bias was reviewed for external validity as some studies consisted of different sample sizes, populations, hospitals or facilities, and types of study. Most studies contained clinical questions in addition to other information that was not specially related to the purpose of this IR.

Internal Validity

Measures were taken to reduce the risk of bias in the review. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) model and the Melnyk framework were used in the IR to reduce bias in the review. To enhance the review validity in the IR, the factors reviewed were as follows: identifying own bias, sample selection, sample size, study design and tools, and reviewing the data analysis. Bias can affect the study results and can cause inaccurate information, thus decreasing the validity of the study findings. A literature review consisted of reviewing the methodological strengths and weaknesses of the studies that were included in the IR prior to including them in the study and formulating a conclusion. The PRISMA flow diagram is included in Appendix B for review.

Appraisal Tools (Literature Matrix)

It is imperative to use appraisal tools to review the different articles in order to assess the reliability, quality, validity, and relevance of the information studied. Using these measures provided the project leader with reliable information that is based on the most up-to-date, evidence-based practice to influence healthcare professionals in making the needed changes based on the information collected to improve patient outcomes and the delivery of care.

Applicability of Results

The purpose of the integrated review was to gather information and to be able to apply the review findings to other areas to improve nursing practice and patient outcomes. The literature review provided generalizability on the use of the teach-back education method for different chronic diseases. The use of the teach-back education method in T2D and health literacy indicated that this method could be used with different types of diagnosis and facilitate patient education and understanding.

Reporting Guidelines (Whittemore & Knafl (2005))

To prevent bias or errors in the integrated review, the project leader used Whittemore and Knafl's (2005) methodology to guide the study in gathering and reviewing scholarly articles to assist in providing a valid and credible integrative review. The project leader utilized a guideline to effectively assess and evaluate the different scholarly articles and decrease the risk of bias during the inclusion or exclusion of articles. The use of guidelines provided a standardized format to assist the project leader in avoiding errors when extracting the data and formulating the data analysis.

SECTION FIVE: DATA ANALYSIS AND SYNTHESIS

Data Analysis Methods Constant Comparison, or Content Analysis or Thematic Analysis

Before conducting the data analysis, it was important to have a good understanding of the starting point by reviewing and understanding the different topics associated with the literature review by synthesizing the different sources of literature collected. According to Whittemore & Knafl (2005), the reviewer must first break down the literature into basic elements. A table matrix was used to guide the project leader in abstracting the data, and information was entered into a Word document or an Excel spreadsheet. The data was analyzed and involved ordering,

coding, and categorizing the data from the articles included in the integrated review (Whittemore & Knafl, 2005). Additionally, the constant comparison method was used, including the four phases: data reduction, data display, data comparison, and conclusion drawing and verification (Whittemore & Knafl, 2005).

Descriptive Results

The review of the results was displayed using a table or diagram to provide a clear understanding of how the data was included and the linkages to the synthesized results (Whittemore & Knafl, 2005). A flow map was used to address the systematic approach that was utilized for the literature search and inclusion criteria. The Melnyk evidence table contains information on the authors, study purpose, design and sample, levels of evidence, intervention and outcome, results, and study strengths and limitations. The Melnyk evidence table is included in Appendix A for review. The data collected in the integrated review assisted the project leader in identifying how the use of the teach-back education method can implicate nursing practice.

Synthesis

Data were extracted from the scholarly articles to analyze and address the relevant information obtained related to the clinical question. Reviewing the study design and the number of participants and reviewing the significant findings provided further information on whether the use of the teach-back education method with Type II diabetic patients and addressing health literacy can improve patient outcomes and understanding of disease management.

Ethical Considerations

This IR project was based on previous research and did not involve the use of human subjects. The Collaborative Institutional Training Initiative (CITI) was completed, and the project was submitted to the Liberty University Institutional Review Board (IRB) for approval.

The IRB responded with an email stating the project was exempt (see Appendix D for IRB letter). The CITI certificate of completion is included in Appendix C for review.

Timeline

A timeline of the doctoral scholarly project reflects a listing of various milestones that were completed during the process of the IR project. The timeline of this project is included in Appendix E for review.

SECTION SIX: DISCUSSION

The literature review indicated that patients who have low health literacy and decreased knowledge were at higher risk of developing complications related to T2D and also, that those patients had an increase in hospital readmission rates (Karunakaran et al., 2018; McCoy et al., 2018; Nguyen, et al., 2017; Regassa, & Tola, 2021). The purpose of this review was to identify different studies that addressed the correlation between low health literacy and patient outcomes in the management of T2D. Multiple articles were reviewed; however, most of the research articles did not directly address the clinical question. Most articles discussed communication barriers and strategies to reduce readmission rates, improve communication, and increase self-management skills of T2D. The findings from the studies do indicate a need to improve communication between the healthcare providers and the patients to improve patient outcomes. The use of the teach-back communication method allowed for healthcare providers to assess the patients' understanding of the information provided and allowed healthcare providers to correct misunderstandings; this, in turn, allowed patients with low literacy to have improved patient outcomes.

The information obtained from the studies provided a better understanding of possible problems associated with decreased patient outcomes for patients who have T2D. It is well

known that patients' miscommunication or lack of understanding leads to adverse effects. There were many different types of approaches stated in the studies with one common goal, which met the demands of the patients, communicated effectively, empowered patients to make the right choices, and improved patient outcomes (Cutler, 2018; Haverfield et al., 2020; Karunakaran et al., 2018; Magny-Normilus et al., 2021; McCoy et al., 2018; Nas et al., 2021; Opper et al., 2019; Regassa & Tola, 2021; Robbins et al., 2019; Sullivan et al., 2019; Uitvlugt et al., 2020; Warchol et al., 2019).

Implications for Future Work

Further research is required to correlate the use of the teach-back education method in Type II diabetic patients with low health literacy and improve patient outcomes. Patient education is of the utmost importance in improving patient understanding of chronic diseases, which is addressed in multiple research studies cited in this report; however, there are still unknowns to explore regarding the obstacles healthcare providers are facing to implement a standardized method to meet patient needs effectively. Based on the literature reviewed, the teach-back education method will improve communications between healthcare providers and patients. This will significantly improve the outcomes of low literacy patients and support nursing practice to expand future research opportunities.

Implications for Practice

Healthcare providers have an obligation to meet the needs of their patients regardless of age, gender, socio-economic status, education, religion, or culture. Patients with low health literacy who have a chronic medical condition such as T2D have the right to understand how to effectively manage the disease and live a healthier life. The use of the teach-back education method can bridge the gap between disease knowledge and management of the disease, thus

improving patient outcomes. A study conducted by Nas et al. (2021) revealed that patients' knowledge level increased with the use of the teach-back method. Knee et al. (2020) suggested using assessment triggers based on glucose and ketones to consult an inpatient diabetic nurse specialist, and findings from this study indicated that the use of a point of care diabetes inpatient nurse decreased readmission rates.

There is no doubt that the literature indicates that effective communication improves overall patient outcomes. Healthcare providers' awareness of patients' understanding of their chronic illnesses such as T2D and how to effectively use the teach-back method can allow the healthcare providers to address areas of concern prior to the patient leaving the clinic or being discharged without fully understanding how to care for themselves and manage their diabetes. Healthcare providers are the experts in the nursing field; thus, they have an opportunity to effectively address healthcare disparities based on the needs of the patients.

Dissemination: DNP Essentials

Essential I

Scientific Underpinnings for Practice was demonstrated in this project by reviewing different studies and using the most current body of knowledge that guides nursing practice and continues to evolve based on that knowledge to improve patient outcomes. Nursing is constantly changing; thus, nursing practice needs to be researched to assess the need for change and to improve patient outcomes. The integrative review obtained various findings that pertained to investigating, identifying, and implementing different strategies for patients with low health literacy and communication barriers in order to improve patient outcomes.

The information collected from the different studies has identified a need to further address and implement strategies to provide the patients with the tools needed to make meaningful decisions based on the knowledge they have to improve the decision-making process

regarding their chronic illness and to improve their overall health. The role of the Doctor of Nursing Practice (DNP) nurse is to review research to address current issues in nursing practice and make recommendations to change nursing practice. Based on the review of multiple studies, there was sufficient data collected that indicated a need for change in order to meet the needs of the patients who have language barriers and low health literacy. Inadequate understanding of diabetes and disease management has led to poor patient outcomes and increased readmission rates. Healthcare providers can utilize the information collected from the different research studies to make the needed changes in their practice to effectively care for their patients, thus providing the best care based on EBP and management of the disease.

Essential II

Organizational and Systems Leadership for Quality Improvement and Systems Thinking: according to the AACN (2006) this is one of the major roles of the DNP nurse to have developed an understanding of the organizational and systems leadership in order to be able to provide further guidance to healthcare providers and address the need for change to improve patient and healthcare outcomes. The integrative review identified that patients are at an increased risk of complications in managing their disease based on low health literacy, lack of understanding, knowledge deficit, low socio-economic status, culture, and lack of communication and education (Bhalodkar et al., 2020; Cutler, 2018; Haverfield et al., 2020; Karunakaran et al., 2018; McCoy et al., 2018; Nas et al., 2021; Uitvlugt, et al., 2020; Warchol et al., 2019).

The DNP nurse must be aware of patients' needs not only in the clinic or hospital setting but also environmental factors that affect the target population. According to the AACN (2006), DNP graduates' practice includes more than direct patient care; it also the needs of the

population and the community. This was an essential part of the integrative review as it allowed an opportunity to meet with different organizational leaders in various settings. Collaborating among different healthcare providers has provided further knowledge on how vital the healthcare professionals' roles are in identifying and implementing strategies to improve patient outcomes and new care delivery models to meet the needs of the target population.

Essential III

Clinical Scholarship and Analytical Methods for Evidence-Based Practice: this essential includes translating research into practice based on the clinical scholarship to apply new knowledge into practice (AACN, 2006). This project utilized an integrative review to analyze existing literature and identified valuable articles that pertained to the problem statement. According to AACN (2006), new knowledge that is integrated from various reliable sources across the nursing discipline includes ways new phenomena and knowledge are formulated. This clinical project allowed for the collection and review of existing research studies to formulate new knowledge in identifying a gap in healthcare delivery. The information gathered has identified a constant variable: lack of understanding and low health literacy. Studies indicated that patients do not have a good understanding or knowledge of their T2D, and a lack of proper communication and teaching by healthcare professionals contributes to poor patient outcomes and healthcare delivery (Bhalodkar et al., 2020; Cutler, 2018; Gupta et al., 2020; Haverfield et al., 2020; Karunakaran et al., 2018; Magny-Normilus et al., 2021; McCoy et al., 2018; Nas et al., 2021; Opper et al., 2019; Sullivan et al., 2019; Uitvlugt, et al., 2020; Warchol et al., 2019).

The use of the teach-back education method can aid in effective communication among healthcare providers and patients as it can omit miscommunication between what was taught to

the patient or identify a need for further education. The research studies have provided essential information on improving communication with patients who have low health literacy. The information collected from these studies will give healthcare providers up-to-date information to examine their practices and identify patterns and patient outcomes to redesign and make the needed changes that will enable them to improve patient and healthcare outcomes.

Essential IV

Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care have been distinguished in this project by the collection of information based on evidence-based practice and have identified a need to improve communication efforts with patients who have low health literacy. The DNP nurse can improve practice and patient care by utilizing the information that was collected from the information systems/technology to support and improve patient care and healthcare systems (AACN, 2006). Many research studies discussed health literacy, the teach-back method, and complications related to diabetes with the use of various databases. Essential IV was demonstrated throughout the integrative review by utilizing the conceptual framework by Whittemore and Knafl (2005) to guide the integrative review in including and excluding research articles.

The use of technology was fundamental to the research study as it provided 8,707 articles to view for the research study, and the use of technology allowed for inclusion and exclusion criteria which provided 18 of the articles for the research study. Technology is constantly changing; thus, it was imperative to utilize technical skills to develop an evaluation plan to extract data from the databases (AACN, 2006). The databases used in the IR included CINAHL, PubMed, and Medline. The collection of articles provided meaningful information to generate

new knowledge to improve nursing practice and provide healthcare providers further insight into how to address the needs of the patients.

Essential V

Health Care Policy for Advocacy in Health Care the data gathered from the various research studies provided further information about advocating for patients' needs. The IR focused on areas that were related to complications with T2D, communication deficits, patients' understanding and implementation of the teach-back method and identifying patients with low health literacy. This study provided valuable information to address the need to improve healthcare delivery. The use of healthcare policies influences healthcare delivery, health disparities, culture sensitivity, and social justice, as indicated by the AACN (2006).

The DNP nurse leader has the expertise to gather and interpret data to make the needed recommendations to policymakers that influence healthcare practices. Being an active member of public health policy allows for the DNP nurse to advocate for equality and social justice in the delivery of care (AACN, 2006). Additionally, the DNP nurse leader has the skills and expertise to address concerns regarding clinical practice, research, and policy development to influence policymaking and reformation at all levels (AACN, 2006). Advocating for patients and healthcare delivery at the policy development level will improve the delivery of care and patient outcomes by addressing the needs of its constituents.

Essential VI

Interprofessional Collaboration for Improving Patient and Population Health Outcomes were demonstrated throughout the project by collaborating with various health care professionals. In order to provide safe, timely, effective, efficient, equitable, and patient-centered care in various areas of healthcare, there must be effective communication skills to

collaborate with interprofessional teams (AACN, 2006). Effective leadership skills and communication skills allowed the project leader to identify available resources and individual expertise, which is an integral part of gathering information and identifying a need for change in practice. Collaborative teams can identify, address, implement and evaluate change in practice based on the need of the facility.

Collaborative teams rely on each other's expertise to formulate a plan of action to address the need for change in the delivery of care among patients with T2D and low health literacy. According to AACN (2006), due to the advanced preparation, DNP nurse leaders are prepared to utilize the interprofessional dimension of health care that enables them to facilitate collaborative team functioning and overcome obstacles. A collaborative team can then make an informed decision regarding changes in the healthcare delivery among diabetic patients.

Essential VII

Clinical Prevention and Population Health for Improving the Nation's Health

information was demonstrated in this project by gathering information on how to improve patient health and outcomes on patients who have low health literacy regardless of race or gender. Low health literacy affects many different types of patients and is a concern that affects the health of a population. Patients with low health literacy have an increase in adverse effects and increased hospital readmission due to a poor understanding of the disease management (Bhalodkar et al., 2020; Cutler, 2018; Gupta et al., 2020; Haverfield et al., 2020; Karunakaran et al., 2018; Magny-Normilus et al., 2021; McCoy et al., 2018; Nas et al., 2021; Opper et al., 2019; Sullivan et al., 2019; Uitvlugt, et al., 2020; Warchol et al., 2019).

According to the AACN (2006), clinical prevention and population health are vital to improving the health status of the United States population and it is estimated that 50% of

preventable deaths are related to unhealthy lifestyles behaviors. The use of the teach-back method supports the national goal efforts to improve patient outcomes and healthcare delivery. The findings from this project served to support proposed interventions to improve healthcare delivery and patient outcomes by utilizing the teach-back education method with patients who have low health literacy.

Essential VIII

Advanced Nursing Practice consists of the foundational practice competencies associated with specialties across the board (AACN, 2006). Information regarding this essential was demonstrated in this project by conducting a comprehensive and systematic review of the literature and evaluating patient outcomes by reviewing diverse and culturally-sensitive approaches. The DNP nurse leader should be afforded sufficient experimental opportunities to inform practice decisions to improve the delivery of care (AACN, 2006). Additionally, the DNP nurse is prepared to demonstrate advanced clinical judgments, systems thinking, evaluating and delivering evidence-based practice to guide, and the mentoring of healthcare providers in improving patient outcomes and healthcare delivery (AACN, 2006).

Conclusions

Patients with low health literacy who have a chronic disease such as T2D have decreased knowledge of diabetes and management of their disease, leading to poor patient outcomes and increased hospital readmissions. Information gathered from the integrative review provided data on the causative factors that are associated with complications related to diabetes. Understanding current health practice and patient needs provides a foundation on where to proceed from here. Efforts to improve the delivery of care continue to fall short; thus, this integrative review provides further awareness of the importance of effective communication.

The implementation of strategies such as the teach-back education method helps to assess patient understanding of information and to re-educate on information that was misunderstood. There are multiple strategies to utilize which can improve communication between healthcare providers and their patients who have low health literacy, but more research is required to identify a method to improve communication and understanding of the patients' disease management. Additional research is needed to identify methods healthcare providers have used to address their patients' needs and identify any obstacles associated with interventions made by the healthcare providers to improve the delivery of care. Healthcare providers should meet the needs of the patients and deliver the best care possible to improve patient outcomes; thus, advocating for the need to change practice is imperative to improve healthcare delivery and decrease complications associated with T2D.

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APPENDIX

Appendix A

Evidence Table

Name: Sonia Romero

Clinical Question: In adult patients with type two diabetes does the use of the "teach-back" method and health literacy assessment for discharge education reduce readmissions related to diabetes complications?

Author (year)	Study Purpose/ Objective(s)	Design, Sampling Method, & Subjects	LOE*	Intervention & Outcomes	Results	Study Strengths & Limitations
Alfonso et al. (2019).	To examine the impact of diabetes on postoperative outcomes on surgical management of pressure ulcers.	This study used a retrospective analysis. The sample consisted of 3,274 surgical patients of which 1,040 had diabetes.	Level 4 retrospective cohort study.	Preoperative prevention, and postoperative wound care and monitoring in patients with diabetes to decrease morbidity and improve	Findings indicate that diabetes was a significant risk factor for superficial and deep surgical site infections and wound dehiscence and readmission in patients undergoing	Limited due to retrospective nature and the database records of patient follow-up for 30 days postoperatively which did not allow for long-term evaluation.

				patient outcomes	surgery for the management of pressure ulcers.	
Bhalodkar et al. (2020).	The study was to determine if there were a difference in 30 days and 365-day hospital readmissions between diabetic patients who received care in a standard primary care setting and those in a specialized multidisciplinary diabetes program.	This study used a randomized controlled prospective study. The sample consisted of 192 patients who were 18 years or older of which 95 patients were from standard care and 97 patients were from a multidisciplinary diabetes program.	Level 2 One or more randomized controlled trials.	Assign multidisciplinary diabetes program upon discharge to reduce hospital readmission rates withing 30 and 365 days.	Findings in this study suggested that 19 % of standard care patients and 7% of the patients in the multidisciplinary group were readmitted within 30 days and the 365-day readmission rate was 38% in the standard care group and 14% of the patients in the multidisciplinary group were readmitted.	Limitations are due to a single participating institution, lack of data on readmissions occurring in a non-affiliated hospital, and the inability to identify the specific component of the structured diabetes program which were responsible for the reduction in the readmission rates.
Cutler (2018).	To evaluate the effectiveness of group self-management	The study used a systematic review and used psychometrics of	Level 1 systematic review	Self-management for patient with chronic	Self-management assisted in improving self-	Self-management does improve clinical outcomes. Limitations are

	support adult patient with chronic conditions to increase self-efficacy, improve clinical outcomes, and reduce hospitalizations.	instruments were used in the study design. Samples ranged from 30 to 1,140 participants. Pre and post studies were used with follow up questionnaires. Studies examined self-care behaviors along with the impact on improving health outcomes on adults' patients with chronic conditions and T2D.		conditions have improved clinical outcomes and improve self-efficacy.	management on self-efficacy, health outcomes, and medication adherence.	the resources and increase complexity of aging patients, nurses will need further education on self-management and lack of using a standardize measurement tools caused a duplication of findings.
Gupta et al. (2020).	The study conducted a population-based cohort study to describe associations between household	This study used a population-based cohort study. The sample consisted of respondents from the 2006	Level 4 case-control or cohort study.	Increase collaboration between levels of care to decrease hospital readmissions	Findings in this study suggested that 1.5% were readmitted within 12 months with diabetes as a	Limitations on the study were related to the coding standards of ICD-10 to consistently distinguish type 1 from T2D.

	and community level income and prehospitalization for Type 1 and II diabetes mellitus in Canadian women and men.	mandatory long-form census linked to 3 years of nationally standardized hospital records. Adults 30-69 years hospitalized with diabetes at least once during the study period.		by focusing on social risk and protective factors.	primary diagnosis and 1.8% had diabetes as a second diagnosis. Men with a low income had higher odds of readmissions and women who had less university education had higher odds of readmissions.	
Haverfield et al. (2020).	To assess the associations between patient–provider interpersonal interventions and the quadruple aim outcomes (population health, patient experience, cost, and provider experience).	The designed is a systematic review, Sample consisted of 73 out of 21,835 studies met the design and inclusion criteria, measured impact on patient experience:	Level 1 systematic review	Moderated demand interventions that focused on a specific communicatio n technique including improved physical function,	38 studies that included the health measures, moderate demand interventions on specific communication provide a positive patient outcome.	The studied showed that patients outcomes improved with moderated demand interventions. The limitations included synthesis is subject to publication and

		improvement in experience such as satisfaction, patient centeredness, and reduce unmet needs.		obesity control, and mental health.		selection bias, may have missed relevant studies, restricted review to RCTs and controlled observational studies and inability to conduct a meta-analysis of the data collected due to heterogeneity in the study designs and outcomes, overlapping of aims may affect the validity and generalizability of the findings.
Karunakaran et al. (2018).	To provide a comprehensive understanding of risk factors associated with 30-day readmission rates among	This study used a retrospective analysis. The sample consisted of 17,284 adult diabetic patients with 44,203	Level 4 retrospective cohort study.	Understandin g readmission post discharge factor to assist in lowering the risk of readmissions.	Findings in this study suggested 27 factors were significantly and independently associated with	Limitations are due to lack of generalizability to other populations, data on potential readmission risk factors were not

	patients with diabetes based on pre-discharge and post-discharge data.	hospital discharges between January 1, 2004, and December 1, 2012. The sample included 45.5% of discharges identified as black, 15.5% as Hispanic, and 32.8% as white.			30-day readmission rates of which lack of post-discharge outpatient visit within 30 days, hospital length on of stay (LOS), previously discharge within 90 days, and discharge against medical advice, sociodemographic, comorbidities, and laboratory values upon admission.	collected, limited observational data collected, and readmissions at another hospital were not captured.
Knee et al. (2020).	To investigate the effects of introducing a point-of-care (POC) ward-based glucose and	This study used a retrospective analysis. The sample consisted of a total of 979 patient	Level 4 retrospective cohort study.	Implementation of the Point of care-Diabetes inpatient specialist	Findings indicate that following the introduction of Point of care-Diabetes	Limited due to the study only being conducted from four acute wards at a single hospital for six

	ketones assessment to trigger a diabetes inpatient specialist nurse (DISN) proactive review to the ward, on the length of stay (LOS), 30-day readmission rate, and 30-day mortality rate.	admissions. 443 patient admissions were from 217 pre-intervention and 536 from 2018 post-intervention of which 46.3% of admissions were typed 1 diabetes-related and 48.5% were typed 2 diabetes, and 6.3% were for unspecified diabetes.		nurse outreach (POC-DISN) system significantly reduce 30-day readmission rates.	inpatient specialist nurse outreach (POC-DISN) system readmission rates decreased from 29.9% in 2017 to 20.1% in 2018 for patients who used insulin to manage their diabetes and for the non-insulin-dependent patient it decreased from 28.1% in 2017 to 201.4% in 2018.	months and could not be generalized to all patients with diabetes.
Magny-Normilus et al. (2021).	The purpose of this study was to design, implement, and evaluate a multipronged transitional care intervention in a hospitalized	This study used a randomized controlled trial. The sample consisted of 180 patients, adult inpatients with T2D on	Level 2 One or more randomized controlled trials.	Introduction of an intensive transitional care intervention or usual care improved 90-	Findings in this study suggested that patients have better A1c levels post-discharge with interventions and no	Limitations are due to the sample size, unable to detect differences in readmission rates, low rate of adherence with interventions, and

	patient with diabetes.	medicine or cardiology unit, insulin-dependent and non-insulin-dependent patients were included.		day post discharge insulin adherence.	difference in rates of hypoglycemia per monitored patient day data. 30-day readmission occurred in 20.5% of the intervention patients and 14.1% of usual care patients.	the study conducted in only one academic medical center limiting generalizability.
McCoy et al. (2018).	To examine the 30-day readmissions for recurrent hypoglycemia and hyperglycemia in a national cohort of adults with diabetes.	This study used a retrospective analysis. The sample consisted of adults who were 18 or older with a diagnosis of diabetes before the date of hospitalization.	Level 4 retrospective cohort study.	Recognize high risk patients to identify opportunities to improve post discharge management of diabetes.	Findings indicate that it is important to build on existing knowledge and to identify areas for further evaluation, intervention, and practice improvement to improve patient outcomes and decrease	Limited due to the use of data claims to identify short-term treatment changes and included a wide range of demographic, clinical, and treatment factors and limited information on medication management and discontinuation.

					readmission rates.	
Nas et al. (2021).	To evaluate the effect of the teach-back educational method on diabetes knowledge level and clinical parameters in patients with T2D undergoing insulin therapy.	Randomized controlled trial, 70 participants were included and 61 of the participants completed the study.	Level 2 randomized controlled trial	Both groups received diabetes education however one group received education using the teach back method.	The group that received the teach back method had an increase knowledge level compared to the group that did not.	Limitations were related to single-center, the effects of education are evaluated within a short period of three months, and the validity and reliability of the applied diabetes knowledge test was not reviewed.
Nguyen, et al. (2017).	Barriers with Latinos affected by diabetes and readmission rates	This study used a cross sectional, descriptive analysis. Latinos aged 40 and older with diabetes. Sample size consisted of 319 participants. Mean age was 60.3 and 50.2% were female.	Level 6-cross-sectional, descriptive analysis	Identify barriers faced by Latinos in participating in research to improve transitional care.	Due to lack of participation and refusal to complete study results were unattainable.	Limitations included mistrust, loss of follow up, refuse participation, lack of interest from participant, denial of disease
Opper et al. (2019).	To improve communication	The study was a two-group pre-	Level 3 Controlled	Redesigning the rounding	Results indicate a decreased in	The limitation of the study was a

	and collaboration about hospital discharge	and post-intervention design. The sample consisted of 413 patients' pre intervention and 191 patients post intervention.	trial (no randomizatio n.	process by engaging interprofessio nal collaboration prior to discharging the patient contributed to a reduction in readmissions.	readmissions and ED visits from pre to post implementation of a redesigned communication process	lack of a contemporaneous control group, only used two nursing units
Regassa & Tola (2021).	Assess predictors of hospital admission, readmission rates, and length of stay among T2D ages of 30 to 69	The method used was a retrospective follow up study. A total of 458 of Type II diabetic patients following treatment at government hospitals from 2013 to 2017	Level 4 retrospective study.	To implement preventive strategies at diabetes, follow up clinic to reduce hospital readmissions.	The results found that seven in ten hospital readmissions among T2D were related to acute metabolic complication, hypoglycemic coma, cardiovascular complications, and diabetic microvascular complications	Study limitations are related to the small sample size for readmission and length of stay, and the data completeness and lack determinants of health

Robbins et al. (2019).	To understand which risk factors, contribute to increasing readmission rates among people discharged from the hospital with diabetes.	This study used a retrospective analysis. The sample consisted of 83 studies from the United States and 70 adopted a retrospective database study design. Information was collected from inpatient electronic records and patient data from primary care or community sources.	Level 4 retrospective cohort study.	Introduce targeted personalized interventions to improve the quality of care for diabetic patients.	Findings in this study indicated that common risk factors associated with readmission rates are related to the co-mobility burden, age, race, and insurance type.	Limitations are related to the fact the study only reviewed English language papers and the grouping of risk factors.
Rodríguez et al. (2020).	To review the implementation of State Innovation Models (SIM) initiative funds to improve diabetic care and 30-day readmission rates	This study used a quasi-experimental research design. The sample consisted of data from hospitalized	Level 3 quasi-experimental approach.	Introduction of State Innovation Models (SIM) did not reduce 30-day readmission rates.	Findings indicate that there was no evidence that SIM reduced 30-day readmission rates on adults	Limitations were related to the study not able to use an interrupted time series with a comparison group designed due to insufficient time

	among adults with diabetes.	adult patients with a diagnosis of diabetes from six states with a total of 969 hospitals and an annual average of 932.1 index visits by adults with diabetes per hospital.			with diabetes and found that there needs to be a greater investment in health information exchange and intensive payment models to promote inter-organizational coordination.	points available in the post-SIM period and could not include all six states.
Sullivan et al. (2019).	To provide health coaching to patients with a primary or secondary diagnosis of T2DM to or increase self-management skills and to reduce 30-day readmission rates.	This study used a pilot study. The sample consisted of 20 patients admitted to an acute care facility with a primary or secondary diagnosis of T2DM, ages ranged from 44-90 years and glucose levels	Level 3 Controlled trial (no randomizatio n	Provide health coaching for patients with diabetes improved self-management and empowered patients to make healthy goals caused a reduction on readmissions.	Findings in this study suggested that the use of health coaching that emphasizes self-management does empower patients to set healthy goals and provide additional support to patients thus	Limitations are due to the sample size of 20 patients and the duration of the pilot study of two months which did not allow to gather further relevant data.

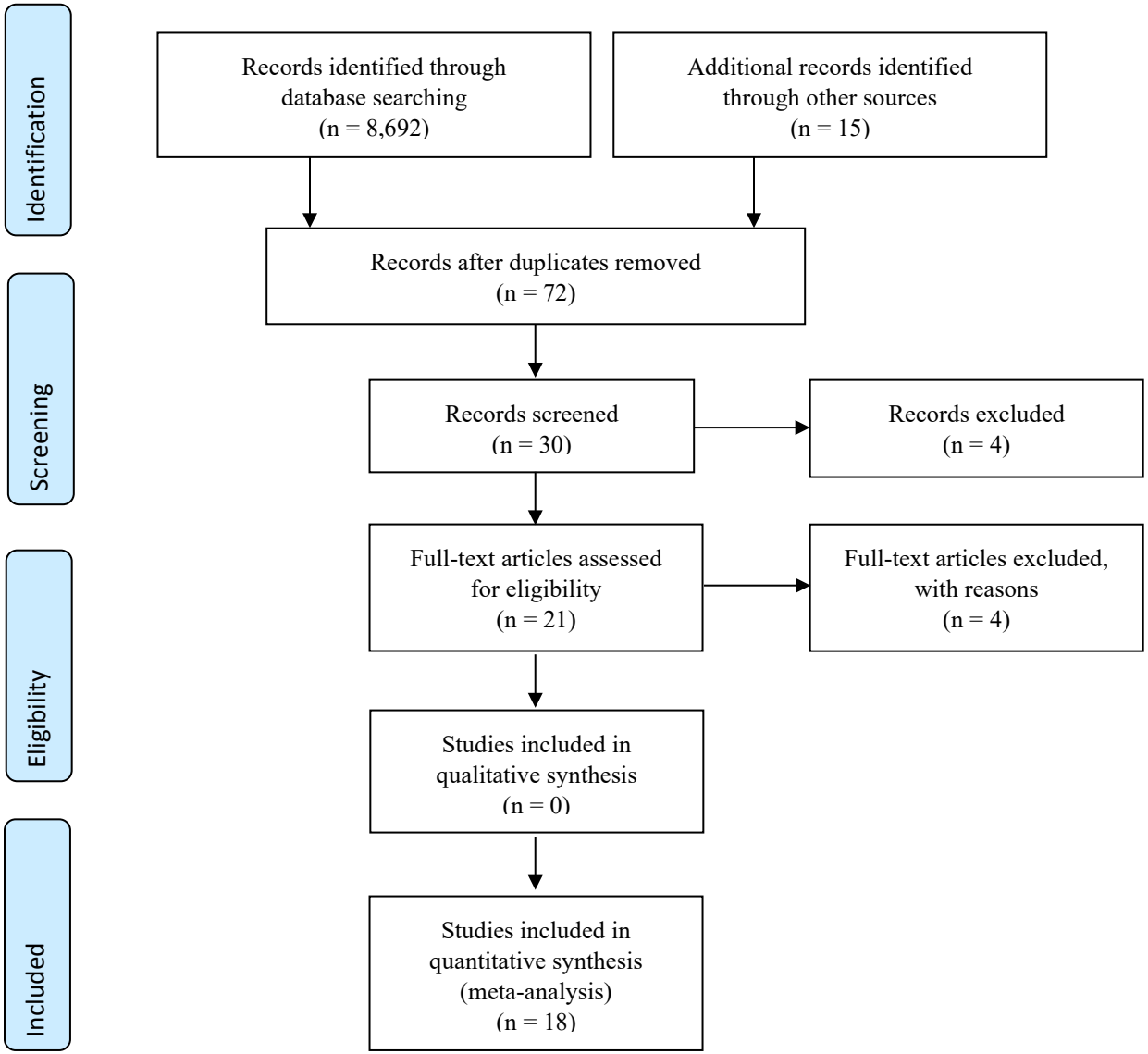
		range from 72-343 collected in a 273-bed acute care hospital.			decreasing readmission rates. There were 16 out of 20 patients that did not require to be readmitted within 30 days of discharge.	
Uitvlugt, et al. (2020).	To compare patients' perspectives on medication and readmissions	This study used a cross sectional observational study. Conducted on patients over the age of 18 who were readmitted within 30 days of discharge. There were 646 readmissions screened with 427 readmitted patients included, 227 of those patients were interviewed and 172 patients included	Level-6 Cross-sectional observational study	The study did not provide interventions on how to improve communication and indicated that further studies would need to be explored.	Findings indicate that patient's readmission rates are often the case due to decrease medication knowledge	Conducted in one hospital and interviewed during the hospital readmission process that could cause hindsight bias

Warchol et al. (2019).	To review the organizational strategies leaders used to reduce readmission rates in the hospital settings in a Medicaid-expansion state	The method used was a qualitative research method. The sample included 15 semi structured interviews with leaders across five hospitals in Missouri. Two of the hospitals were in the metropolitan area, and three hospitals were in the rural area	Level 5 qualitative research method	The study suggested to identify the needs of the population and to transition healthcare to a value base care in order to implement readmission reduction strategies.	The study found that 60% of the participants found coordination across the care continuum was effective, and 73% indicate patient education was an issue affecting readmission, 73% indicate developing local and community approaches were critical in reducing readmissions, 100% participants indicate that the need to provide post-acute services to patients to	The limitation on this study was related to the study only using one geographic area of Missouri

					reduce readmissions.	

Appendix B

PRISMA Diagram



Appendix C

CITI Training Certificate

Appendix D

IRB Letter

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

TO: Sonia Romero, Sonia Romero, Sharon Kopis

FROM: Liberty University IRB

DATE: Oct 14, 2021

RE: Notice of Receipt of Initial Submission on Oct 14, 2021 5:38:25 PM EDT

STUDY #: IRB-FY21-22-301
STUDY TITLE: Using the "Teach-Back" education method with Type II Diabetic Patients and Health Literacy: An Integrative Review

Your IRB submission for the above-referenced study has been received by the Liberty University IRB via Cayuse IRB. You will be notified if further information is needed.

Once an analyst is assigned to review your study, it will be listed as "in pre-review" in Cayuse until it is ready for approval. A pre-review status does not mean that our review has not begun.

Please note, both our preliminary and subsequent reviews may take 15-20 business days to process.

Please see our website for information on how to revise your study once it is returned to you.

Thank you,

Research Ethics Office
434-592-5530

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Appendix E

Timeline

Milestone	Deliverable	Estimated Completion Date
Abstract	Gather information and create an abstract.	August 29, 2021- Revised January 6, 2022
Introduction	Write the introduction based on information collected.	August 29, 2021- Revised October 13, 2021
Defining Concepts and Variables	Address concepts and variables.	August 29, 2021- Revised October 13, 2021
Rational for Conducting the Review	Write the rational for conducting the review.	August 29, 2021- Revised October 13, 2021
Purpose/Review Question	Provide the purpose and or the review question.	August 29, 2021- Revised October 13, 2021
Inclusion/Exclusion Criteria	Describe the inclusion and exclusion of the IR project.	August 29, 2021- Revised November 28, 2021
Conceptual Framework	Provide the information on the conceptual framework.	August 29, 2021- Revised November 28, 2021
Search Organization Reporting Strategies	Provide search organization reporting strategies.	August 29, 2021- Revised November 28, 2021
Terminology	Discuss the terminology in the IR project.	August 29, 2021- Revised November 28, 2021
Management of the Collection of Data	Provide information on the collection of data.	August 29, 2021- Revised November 28, 2021
Defend Scholarly Project	Complete sections one through six of the IR project.	September 11, 2021- Revised January 6, 2022
Source of Bias	Discuss the sources of bias.	September 26, 2021- Revised November 28, 2021
Internal Validity	Describe the internal validity.	September 26, 2021 Revised November 28, 2021
Appraisal Tools	Provide information on the appraisal tools.	September 26, 2021 Revised November 28, 2021
Applicability of Results	Provide information on the applicability of results.	September 26, 2021 Revised November 28, 2021
Reporting Guidelines	Discuss the reporting guidelines for the IR project.	September 26, 2021 Revised November 28, 2021
Data Analysis	Complete the data analysis.	September 26, 2021 Revised November 28, 2021
Descriptive Results	Provide the information on the descriptive results.	September 26, 2021 Revised November 28, 2021
Synthesis	Write the synthesis of the IR project.	September 26, 2021 Revised November 28, 2021
Implications for Practice	Provide information on the implications for practice.	September 26, 2021 Revised November 28, 2021
Dissemination of Results	Discuss the dissemination of results on the IR project.	September 26, 2021 Revised January 6, 2022
Defense PowerPoint	PowerPoint defense.	January 7, 2022
References	Provide references.	August 29, 2021- Revised November 28, 2021
Appendices	Gather appendices information. Literature Matrix, CITI training, PRISMA, and IRB letter.	August 29, 2021- Revised January 6, 2022