Improving COPD Patient Outcomes Using the Teach-Back Method

An Integrative Review

Submitted to the

Faculty of Liberty University

In partial fulfillment of

The requirements for the degree

Of Doctor of Nursing Practice

By

Bichundo Lambert

Liberty University

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Scholarly Project Chair Approval:

Cindy Goodrich, EdD, MSN, RN, CNE Date

Abstract

Chronic obstructive pulmonary disease (COPD) is a common clinical health concern that causes airflow resistance to the lungs and persistent respiratory symptoms, which can impact quality of life for the COPD patient. The condition is common to adults over 40 years of age. It is estimated that 210 million people worldwide suffer from the disease, and its incidence is on the rise. In United States, COPD affects 16 million people and costs the government $24 billion annually. The researchers predicts that COPD will be the third-leading course of mortality by 2030 worldwide. The objective of this integrative review was to evaluate the effectiveness of teach-back method utilized by healthcare providers to improve COPD patient outcomes. The results reflected that the use of the teach-back intervention for COPD patients led to better patient outcomes, including ideal self-care management and improved quality of life. The 21 selected articles provided valuable evidence into the effectiveness of the teach-back approach on improving patient self-management and quality of life for COPD patients while decreasing hospital readmission rates and reducing health care cost expenditures.

Keywords: teach-back, self-care, readmission, COPD

Copyright Page

Dedication

Truly, the hand of God has been with me in every step of my achievement. I will always glorify Him for being my steadfast rock in every trial and obstacle; He gave me strength to continue pursuing my goals. I would like to express my gratitude to my husband and children for standing by my side from the start until the completion of my scholarly project. Thank you to my husband, David Sr., for praying for me and providing words of encouragement. Special appreciation to my daughters, Marie, Theresa, and Victoria, and son, David Jr., who never stop providing emotional support and who believed in my ability to reach my goals. I am so grateful for my three classmates, Dr. Bethany Furman, Dr. Ryleigh Hawker, and Dr. Klaire Thomason, who were with me since day one of our DNP program; they have been God-sent angels for me. I thank God for blessing me with supportive family members and classmates as I am completed my research project.

Acknowledgments

First, I would like to acknowledge my chairperson, Dr. Cindy Goodrich, who dedicated countless hours to provide support and guidance through the course of my Doctor of Nursing Practice scholarly project. I consider Dr. Goodrich my role model, mentor, and sister in Christ who led by example. I am blessed to call her my professor. I will always treasure her compassionate care for others. Also, I am grateful for Dr. Mayberry and Dr. Puckett, who were my preceptors at the hospital for my practicum experience. With their guidance and expertise, I was able to meet my practicum goals and objectives. Both of them provided valuable opportunities that equipped me with substantial knowledge in nursing leadership. I would like to acknowledge Dr. Maddox's insights on the teach-back method for COPD patients; she is an expert in attending to patients with chronic lung disease. Finally, I appreciate all staff members and professors of the Doctor of Nursing Practice department at Liberty University for making it possible for me to have positive experience during the course of my education.

Table of Contents

Abstract 3
Copyright Page 4
Dedication 5
Acknowledgments 6
List of Tables 9
List of Abbreviations 10
Section One: Formulating the Review Question 11
Defining Concepts and Variables 15
Hospital Readmission Rates 16
Quality of Life Effects 17
Self-Management Strategies 17
Teach-Back Method ..... **Error! Bookmark not defined.**
Rationale for Conducting the IR 17
Purpose and/or Review Question(s) 18
Formulate Inclusion and Exclusion Criteria 20
Conceptual Framework 21
Section Two: Comprehensive and Systematic Search 23
Terminology 25
Section Three: Managing the Collected Data 25
Section Four: Quality Appraisal 26
Sources of Bias 27
Internal Validity 28
Appraisal Tools 28
Applicability of Results 28
Reporting Guidelines 29
Section Five: Data Analysis and Synthesis 29
Thematic Analysis 29
Descriptive Results 31
Synthesis 33
Theme 1: Proper Medication Technique 33

Theme 2: Comprehension of the Disease Process 34
Theme 3: Impact of the Teach-Back Method 35
Theme 4: Importance of Patience Participation 35
Theme 5: Importance of Managing the Disease 36
Theme 6: Effectiveness and Applicability 37
Ethical Considerations 39
Timeline 40
Section Six: Discussion 40
Implications for Practice/Future Work 40
Q1. In COPD patients, does utilization of the teach-back method impact adherence to treatment plans? 42
Q2. In COPD patients, what is the impact of using the teach-back method on hospital readmission rates? 43
Doctor of Nursing Practice Essentials 44
Dissemination 46
References 47
Appendix A 52
Appendix B 62
Appendix C 63
Appendix D 64
Appendix E 65
Appendix F 66

List of Tables

Table 1. Inclusion and Exclusion Criteria.....20

List of Abbreviations

Chronic Obstructive Pulmonary Disease (COPD)

Doctor of Nursing Practice (DNP)

Integrative review (IR)

Jerry Falwell Library (JFL)

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

Section One: Formulating the Review Question

The purpose of this integrative review (IR) was to explore and synthesize the impact of the use of the teach-back method on chronic obstructive pulmonary disease (COPD) patient outcomes. COPD is a progressive respiratory condition characterized by airflow limitation and persistent respiratory symptoms, which can impact quality of life for the patient (Rang et al., 2020; Shnaigat et al., 2021). Despite advancements in medical treatment, COPD remains a leading cause of morbidity and mortality worldwide (Boers et al., 2023; Isaac et al., 2020). One aspect of successful COPD management is effective patient education on self-management strategies, especially during the transition from hospital to home (Ahn et al., 2020; Benzo & McEvoy, 2019; Bourbeau & Echevarria, 2020). The teach-back method, which involves patients repeating or explaining information back to their health care provider, has emerged as a valuable strategy to ensure patient understanding and retention of key self-management concepts (Mashhadi et al., 2021). The teach-back method, when used to enhance self-management strategies among COPD patients post-discharge, is a promising avenue for improving patient outcomes and reducing hospital readmission rates. COPD management requires patients to actively participate in their care, including by adhering to medication regimens, understanding symptom management techniques, and recognizing when to seek medical attention (Shnaigat et al., 2021).

Literature indicates that educating COPD patients on disease management strategies impacts patient outcomes because education gives patients the ability to identify complications of the illness at early stage and manage them before they become life-threatening (Ahn et al., 2020; Bricard & Or, 2019; Bourbeau & Echevarria, 2020). Education also has a positive impact on patient compliance with their treatment regimen and quality of life. Nurses involvement in the

education of COPD patients on disease management has been shown to have a positive impact on patients' frequent use of self-management strategies and reduce readmission rates over time (Benzo & McEvoy, 2019; Rang et al., 2022).

Patients' knowledge about the nature of the disease process is a major factor in their self-management behaviors (Yen & Leasure, 2019). The teach-back method is an approach that has been utilized by various health care organizations and providers. Research has shown that the teach-back method is associated with decreased readmission rates among patients with ambulatory care sensitive conditions, such as asthma, cardiovascular disease, COPD, and diabetes (Hong et al., 2019). The effectiveness of teach-back educational interventions in enhancing COPD outcomes has been shown in the research. This method enables patients to effectively self-manage their illness, as education is essential to the management of COPD. Several studies have demonstrated that COPD patients who see a general practitioner for follow up soon after discharge from hospital have a lower chance of readmission (Bourbeau & Echevarria, 2020). Research has indicated that multidisciplinary treatments, such as teaching on self-management measures and discharge planning, can effectively decrease the number of hospital readmissions (Hegelund et al., 2020; Isaac et al., 2020; Rang et al., 2022).

COPD is a significant public health problem and continues to be a major cause of morbidity, disability, and death around the world (Rang et al., 2022). In their study, Rang et al. (2022) indicated that patients with COPD tend to face episodes of exacerbation that necessitate admission and readmission. Rehospitalizations are frequent and expensive among Medicare patients, with an estimated 2% Medicare COPD patients returning within a month of discharge for the disease exacerbation . Buhr et al. (2020) noted that for COPD patients, readmission expenditures contributed to an estimated $24 billion in health care costs annually. COPD-related

emergency department visits cost the United States an average of $900 million each year (American Lung Association, n.d; Boers et al., 2023; Owusuaa et al., 2022). The Hospital Readmissions Reduction Program is the framework set by the Affordable Care Act to lower Medicare reimbursements to hospitals with excess 30-day readmissions for specific conditions, including acute myocardial infarction, pneumonia, congestive heart failure disease, and COPD (Buhr et al., 2020). As such hospitals with high readmission rates within 30-days are not reimbursed under the Hospital Readmissions Reduction Program for Medicare patients. Among patients hospitalized for COPD readmission as a result of exacerbation shortly after discharge continues to be an issue (Abas et al., 2020). Healthcare practitioners are required to collaboratively contribute to initiatives seeking to decrease hospital readmission rates and long-term complications. In order to reduce health care expenditures while empowering COPD patients to take charge of their own health, it is crucial that COPD patients understand the nature of the disease, know when to use medications as prescribed by the provider, and demonstrate the proper technique for devices such as an inhaler spacer and nebulizer machine (Abas et al., 2020; Buhr et al., 2020; Rang et al., 2022).

The use of respiratory inhalers was an important mechanism for providing medications to patients in time of need. However, it is noted that continued application of inhalers reduces the control of COPD. In addition, the incorrect application of inhalers minimizes the efficacy of the medications. The research revealed the need for patients' education about the optimal methods and uses of inhalers according to respiratory guidelines (Global Initiative for Chronic Obstructive Lung Disease, 2022). The role of nurses in managing patients with COPD was clearly evident in the literature reviewed (Benzo & McEvoy, 2019). The nursing intervention on utilizing teach-back method was seen by researchers as the ideal way of educating COPD

patients about the right ways of handling inhalation devices and using inhalers. The transition period during the course of hospitalization was expressed by studies as a time when nurse education is important to the patient. The transition period from the hospital discharge to home was explored by researchers as an important part of the patient's recovery process which needs ideal management of medications, and clinical monitoring of the condition (Ahn et al., 2020; Barnestein-Fonseca at al., 2023; Vázquez-González et al., 2023). Patients should be educated about COPD and the need for inhalers as well as how to handle medications while out of the hospital. Thus, nurses have a crucial role in helping patients begin their self-management journey.

The inpatient education method commonly known as teach-back was the most widely researched topic. Studies illustrate that teach-back technique actively engage patients, where patients are asked to explain their understanding of instructions or even demonstrate what they have been taught (Abas et al., 2020). The use of the teach-back method was shown to improve patient outcomes since it ensures the patients have adequately understood aspects of self-care such as modes of medications, adverse effects, and follow-up methods. If the patient is not able to adequately demonstrate what has been taught, then the care provider repeats the lesson for better understanding by the patient. The teach-back method aims to ensure the patients master specific self-management strategies to increase the likelihood of positive outcomes. The literature review examined the evidence-based teach-back method and identified it as the most effective intervention for managing COPD patients, especially when applied to the use of respiratory inhalers (Ahn et al., 2020; Barnestein-Fonseca et al., 2023; Hegelund et al., 2020; Rang et al., 2022; Vázquez-González et al., 2023).

Literature reviews have shown that most patients remain confused about their health care plans after discharge. A substantial amount of information is forgotten after discharge. The teach-back method engages patients and allows them to take an important role in their health. It also ensures they understand health information that has a significant impact on their health behavior and outcomes. By using the teach-back method, nurses can assess patients' understanding and then reteach or modify their teaching if comprehension is not demonstrated (Benzo & McEvoy, 2019; Bourbeau & Echevarria, 2020; Yen & Leasure, 2019). Researchers have also found that providing health information focused on individual needs not only increased patients' understanding of their health needs and improved their health literacy but also supported self-management and promoted health outcomes for adults with chronic illness (Yen & Leasure, 2019). Literature reviews have revealed that effective communication between health care providers and COPD patients is crucial for assuring patient comprehension and retention of key self-management concepts. According to Rang et al. (2022), incorporating teach-back exercises into patient education sessions facilitates active patient engagement, reinforces learning, and empowers patients to take ownership of their health. The standardized educational approach enhances the quality and consistency of COPD patient education and promotes continuity of care from hospital to home, leading to improved adherence to treatment plans, enhanced symptom management, and reduced hospital readmission rates among COPD patients (Shnaigat et al., 2021).

Defining Concepts and Variables

Teach-Back Method

The teach-back method, which involves patients repeating or explaining information back to their health care providers, has emerged as a valuable strategy to ensure patient understanding

and retention of key self-management concepts (Benzo & McEvoy, 2019; Mashhadi et al., 2021). The teach-back method is a promising avenue for improving patient outcomes and reducing hospital readmission rates by enhancing self-management among COPD patients post-discharge. COPD management requires patients to actively participate in their care, including by adhering to medication regimens, understanding symptom management techniques, and recognizing when to seek medical attention (Bourbeau & Echevarria, 2020; Shnaigat et al., 2021; Talevski et al., 2020; Yen & Leasure, 2019).

Hospital Readmission Rates

Among patients hospitalized for COPD, readmission as a result of exacerbation shortly after discharge continues to be an issue. According to Abas et al. (2020), factors that predict the severity of COPD are correlated with frequency of hospitalizations. Rehospitalizations are frequent, especially among Medicare patients, with an estimated of 2% of patients readmitted within a month of discharge. COPD readmissions within 30 days after acute exacerbation are penalized under Hospital Readmissions Reduction Program (Buhr et al., 2020). In their study, Buhr et al. (2020) noted COPD-related readmissions contribute to an estimated $24 billion in health care costs each year. In order to reduce health care costs, it crucial to empower COPD patients by engaging them in managing their condition. COPD management requires active patient participation, which includes adherence to medication regimens, attendance at follow-up appointments with one's health care provider, and the ability to identify when medical attention should be sought (American Lung Association, n.d; Boers et al., 2023; Issac et al., 2020; Shnaigat et al., 2021).

Quality of Life Effects

Quality of life describes the effects of a disease on people's lives. As COPD advances, the lung function of the patients begins to deteriorate and airflow is obstructed, leading to chest tightening, dyspnea, and other symptoms. Mental health issues are also important to evaluate in patients suffering from COPD. Frequent hospitalization can lead to mental health issues such as depression and anxiety/panic attacks, which may affect the patient's compliance with medication. Throughout patient care, there is a need to create an environment that enhances the patient's social, psychological, and physiological health (Hegelund et al., 2020). The teach-back method is an ideal approach to quality improvement, as it addresses COPD patients' specific needs related to managing their condition.

Self-Management Strategies

Improvement of disease management strategies has shown to positively impact COPD patient outcomes. In their study, Rang et al. (2022) showed that the teach-back method significantly impacted COPD patients' self-care skills, self-care responsibility, self-concept, and health knowledge level; additionally, patients who used the teach-back method were less likely to experience readmissions. Teach-back is an ideal approach to ensuring that the COPD patient understands and retains crucial information related to the management of their condition. This method is a model of health education that ensures patients are fully understand their comprehensive treatment plan (Ahn et al., 2020; Benzo & McEvoy, 2019; Hong et al., 2019).

Rationale for Conducting the IR

The rationale for this review is the impact of COPD on patients, families, and health care systems. COPD affects an estimated 16 million people in the United States and costs the country about $24 billion annually (American Lung Association, n.d; Buhr et al., 2020). In addition,

COPD is the fifth-leading cause of mortality in the United States and worldwide is the third-leading cause of death. Furthermore, complications related to COPD greatly increase the mortality rate and account for about 72% increased annually in medical care costs associated with COPD (American Lung Association, n.d; Boers et al., 2023; Owusuaa et al., 2022).

The review is crucial in highlighting the integrated care model that aims at improving access to care and care delivery to patients suffering from COPD. Research has pointed out that use of this integrated model helps in improving quality of life, reducing the extent of symptoms, reducing health care costs, and improving care delivery (Rang et al., 2022; Talevski et al., 2020; Yen & Leasure, 2019). This IR aimed at bringing into focus the many studies that address the best way to treat patients with COPD. Through the studies, additional models like the proactive iCare have been identified as potential models for resolving advanced COPD cases (Talevski et al., 2020).

The IR was conducted to enhance the utilization of the teach-back method to improve COPD patients' outcomes. The teach-back method should be used by nursing staff to enhance health education for COPD patients. This approach will help nurses evaluate patients' understanding the treatment plan and practices as instructed by the health care practitioners. This will in turn improve self-management and improve patients' quality of life (Hegelund et al. 2020; Rang et al., 2022).

Purpose and/or Review Question(s)

COPD is a progressive respiratory condition characterized by airflow limitation and persistent respiratory symptoms (Shnaigat et al., 2021). Despite advancements in medical treatment, COPD remains a leading cause of morbidity and mortality worldwide. One aspect of managing COPD is effective patient education and self-management strategies, which are

particularly important during the transition from hospital to home (Ahn et al., 2020). The teach-back method is a promising avenue for improving patient outcomes and reducing hospital readmission rates by enhancing self-management strategies among COPD patients post-discharge. COPD management requires patients to actively participate in their care, including by adhering to medication regimens, understanding symptom management techniques, and recognizing when to seek medical attention.

The teach-back method, which involves patients repeating or explaining information back to their health care providers, has emerged as a valuable strategy to ensure patient understanding and retention of key self-management concepts (Mashhadi et al., 2021).

The IR questions for this project are:

1. In COPD patients, does utilization of the teach-back method impact adherence to treatment plans?
2. In COPD patients, what is the impact of using the teach-back method on hospital readmission rates?

The objective of this IR was to evaluate the effectiveness of the teach-back method on improving COPD patient outcomes through evidence-based education approach. As indicated in multiple research findings that teach-back method tailored for nurses and other health care providers to employ during patient education sessions, during hospitalization and upon discharge, and follow-ups with health care providers is the best approach for COPD patient education. Implementing this protocol can enable nurses and other health care providers to effectively communicate essential information to COPD patients and ensure comprehension and retention of key self-management concepts. According to Rang et al. (2022), incorporating teach-back exercises into patient education sessions facilitated active patient engagement,

reinforced learning, and empowered patients to take ownership of their health. The use of this standardized approach enhanced the quality and consistency of patient education and promoted continuity of care from hospital to home, leading to improved adherence to treatment plans, enhanced symptom management, and reduced hospital readmission rates among COPD patients (Shnaigat et al., 2021).

Formulate Inclusion and Exclusion Criteria

In order to obtain a high-quality study, there were developed inclusion criteria for the literature review. The literature reviewed for this IR focused on patients with COPD in the clinical setting. In addition, clinical, demographic, and geographic attributes of the patients were considered. Studies with patients over 18 years and older included in the review. Males and females from diverse ethnic backgrounds were included in the study. In addition, articles that strictly dealt with COPD were considered for the IR. Articles less than 5 years old were included in the study since they provided the most current and updated information about treatment models and trends in managing COPD (Toronto & Remington, 2020). The articles selected used research designs like descriptive research, experimental, correlational, and quasi-experimental (Vázquez-González et al., 2023).

Excluded studies were those focused on other conditions like pneumonia, suspected malignancy, acute electrocardiogram changes, and patients requiring full-time care. Also, articles with participants with type 1 diabetes and those in need of intravenous therapy were excluded. Studies older than 5 years were also excluded. Finally, articles about exploratory studies that are under-scrutinized, and summary of events were excluded (Toronto & Remington, 2020).

Table 1

Inclusion and Exclusion Criteria

Criterion	Included	Excluded
Sample	Adult populations 18 years and older	Populations under 18 years of age
Focus	COPD inpatient and outpatient settings, admission and readmission rates, disease prevention, patient education plans	Other topics
Availability	Full text	Summaries, abstracts only
Language	English	Other languages
Date of publication	2019 to 2023	Prior to 2019

Conceptual Framework

The IR was conducted based on Whittemore and Knafl's (2005) model, which provided a framework for article selection, data collection, and analysis of the literature findings. Whittemore and Knafl differentiated the IR from other methods and provided a specific approach to conducting an IR that utilized a variety of primary research methods as a part of substantial evidence-based practice initiatives (Whittemore & Knafl, 2005, p. 546). The approach was utilized in this scholarly project on the impact of the teach-back method on COPD patient outcomes.

The five stages of the Whittemore and Knafl (2005) framework were utilized in the IR for this scholarly project. The first stage is problem identification, which was employed to analyze the impact of the teach-back method on COPD patient outcomes. The second stage is a literature search, which was performed across multiple databases through the Jerry Falwell Library (JFL), including EMBASE, ProQuest, PubMed, MEDLINE, CINAHL, and Cochrane Library, using keywords and medical subject headings terms. The data were filtered and organized using Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA; see Appendix E) model. Twenty-one studies about the use of the teach-back method in COPD management were included in this review (see Appendix A).

Melnyk's levels of evidence were utilized to assess the selected articles based on methodological quality of the study design, validity, and applicability to the care of COPD patients (Melnyk & Fineout-Overholt, 2015; Toronto & Remington, 2020). Evidence obtained from systematic reviews of randomized controlled trials and evidence-based clinical guidelines produced high-quality, reliable evidence for the IR. Other articles were selected from well-designed controlled quasi-experimental trials and case-controlled and cohort studies. The fourth stage, data analysis, was completed through an examination of themes across studies. Relevant articles were selected based on their titles and abstracts, with Level I, II, and III evidence sources prioritized for enhanced reliability (Melnyk & Fineout-Overholt, 2015). This involved the drawing of comparisons among the selected articles. The idea behind this method was to identify differences or similarities across the data sets, and this analysis enabled the researcher to make inferences from the data. The final stage is the IR presentation of the study findings from primary sources that support utilization of teach-back method in clinical settings to improve COPD patient outcomes and quality of life (Whittemore & Knafl, 2005).

Barriers related to both health care providers and patients were identified. Several studies revealed a lack of standardized education protocol and guidelines for COPD patients for the health care providers to utilize. For COPD patients, studies identified a deficit of knowledge related to the disease process, insufficient self-management strategies (causing improper use of inhaler medication devices), and failure to attend follow-up appointments with health care providers (Rang et al., 2022; Talevski et al., 2020; Yen & Leasure, 2019). However, the literature reviews indicated that these barriers can be overcome through the use of the teach-back method during discharge from the hospital, follow-up with health care providers, and the implementation of an evidence-based, standardized education protocol for patients with COPD

for consistency of care across health care practices (Ahn et al., 2020; Barnestein-Fonseca et al., 2023; Bourbeau & Echevarria, 2020; Coffey et al., 2019; Melender et al., 2020).

Studies have shown that the evaluation of patient's knowledge and understanding of disease self-management strategies prior to hospital discharge is crucial, as it reduces the readmission rate for patients with COPD (Abas et al., 2020; Bricard & Or, 2019; Hegelund et al., 2020; Mashhadi et al., 2021). In studies, the teach-back method was identified as the best approach for the health care providers to identify areas in which reeducation or reinforcement are needed. This method requires COPD patients to repeat in their own words or demonstrate provided instructions as way to verify comprehension of the information (Hong et al., 2019; Mashhadi et al., 2021; Rang et al., 2022; Talevski et al., 2020; Vázquez-González et al., 2023; Yen & Leasure, 2019).

Section Two: Comprehensive and Systematic Search

The initial stage of the IR is data collection through comprehensive literature search. The literature brings into light the current state of the topic, including the major improvements and interventions. Ideally, a literature review identifies the gaps that exist in the current research. The reason for undertaking the IR was to evaluate the effectiveness of teach-back method from the literature review as guided by review questions to formulate inclusion and exclusion criteria for the selected articles (Toronto & Remington, 2023; Whittemore & Knafl, 2005). This helped to answer the IR questions by evaluating existing studies that provide evidence and identifying the gaps to assess the need for better and further research (Toronto & Remington, 2020; Whittemore & Knafl, 2005).

A systematic literature search was conducted across multiple databases through JFL, including EMBASE, ProQuest, PubMed, MEDLINE, CINAHL, and Cochrane Library, using

keywords and medical subject headings terms. The search used terms related to COPD, patient education, the teach-back method, self-management, hospital discharge, and readmission prevention. Boolean operators “AND” and “OR” were used to combine search terms effectively. The search was limited to articles published in English and not more than 5 years old. The researcher initially screened relevant articles based on their titles and abstracts to identify potentially eligible studies, prioritizing Level I, Level II, Level III evidence sources for enhanced reliability (Toronto & Remington, 2020).

The selected articles were organized according to Melnyk’s levels of evidence based on the methodological quality of the study design, validity, and applicability for the care of COPD patients (Melnyk & Fineout-Overholt, 2015; Toronto & Remington, 2020). Systematic review randomized controlled trials, and evidence-based clinical guidelines were prioritized, as they provide high-quality and reliable evidence for the IR on the use of the teach-back method with COPD patients. Other articles selected included well-designed controlled quasi-experimental trials, case-control studies, and cohort studies (Melnyk & Fineout-Overholt, 2015). This focused approach ensured that articles meeting rigorous methodological standards were considered for inclusion in the IR, thus strengthening the validity and reliability of the findings (Toronto & Remington, 2020; Whittemore & Knafl, 2005). Full-text articles were then assessed for eligibility based on predetermined inclusion and exclusion criteria, which focused on studies examining the effectiveness of the teach-back method in improving self-management strategies and reducing hospital readmission rates among COPD patients post-discharge (Bourbeau & Echevarria, 2020; Bricard & Or, 2019; Buhr et al., 2020; Coffey et al., 2019; Hegelund et al., 2020; Hong et al., 2019; Mashhadi et al., 2021; 2020; Rang et al., 2022; Shnaigat et al., 2021; Talevski et al., 2020; Yen & Leasure, 2019).

Terminology

Certain database terminology are essential to understand when conducting an IR. The term *platform* describes software that provides access to specific database. In some cases, the platform may not have a name similar to that of the database. For this IR, CINAHL was used to conduct a comprehensive literature search. The EBSCO platform was used to access the CINAHL database. Another platform that was used in this IR was ProQuest, which permits access to the Medline database. The term *database* refers to an extensive collection of electronically searchable materials including journal articles, books, reports, and dissertations. The search interface permits the reviewer to navigate the database and organize the search; it also permits filtering and refining, which are essential to the IR process. Search engines are systems that allow the researcher to obtain materials from online sources that are not in an academic library (Toronto & Remington, 2020). However, JFL is an academic library that was utilized as a search engine, which allowed the access to multiple databases.

Section Three: Managing the Collected Data

The collected data had to be valid, meaning they were a reflection of the reality that was to be measured. The data were screened to eliminate studies that did not fully address the target topic. Screening helped in excluding those studies that might pose errors that might have affected the analysis. The cleaning of data in this research was vital and ensured that the final data were accurate and ready for evaluation and analysis. The data were filtered and organized using the PRISMA model (see Appendix E; Toronto & Remington, 2020), which allowed for identifying themes, and replacing values. Documentation was an important step in managing the collected data. Documenting data involved developing a record of how the data were collected and validating data by highlighting the attributes and limitations of the studies. Through

documentation, it was easy to keep track of data processes and to effectively communicate their significance.

In addition, data organization involved storing and arranging data to facilitate better access and analysis. Organization of data was a critical aspect of data management, as it affected the security, performance, and scalability of data. Since the amount of data was small, they were organized in Google Drive (Toronto & Remington, 2020). Further review of the data ensured evaluation of their quality and sustainability and also helped in highlighting gaps and issues that needed attention. Review of data was a continuous practice throughout the sampling process, data collection, and analysis. Through a review of data, there was better data management toward ensuring the data met the inclusion criteria and the study expectations (Melender et al., 2020).

Data were collected from databases accessible via JFL, including PubMed, Medline, CINAHL, and Cochrane Library. An estimated 21 studies were about COPD management using teach-back method were selected for the IR (see Appendix A).

Articles were selected based on inclusion and exclusion criteria. For instance, articles were included only if they were published within the last 5 years. In addition, articles that were focused on research about the effect of teach-back models in enhancing self-care to in-patients with COPD were targeted. Selected articles contained complete clinical data or were systematic reviews. On the other hand, articles focusing on patients suffering from severe mental illnesses, metastatic malignancy, or poor physical condition were excluded.

Section Four: Quality Appraisal

The quality of the studies and data used in this IR is optimal. In the articles included in the review, the data and the methods used in data selection, evaluation, storage, and analysis

were of high quality. The studies selected were published from 2019 to 2023. Selecting high-quality data from the most current research enhances the review's validity and credibility (Toronto & Remington, 2020).

Sources of Bias

A crucial source of bias in the data from the selected studies was the design flaws, which can affect the validity of the findings and poses the risk that the intervention effects will be overestimated. The ideal way of selecting studies that were free from bias was scrutinizing the design used and the exploration of findings in every study (Toronto & Remington, 2020).

Confirmation bias was also a possibility in the studies. Confirmation bias could have occurred since the participants from selected studies had the knowledge they were being observed during the scientific study, which might have led the participants to consciously or unconsciously accepted differently response regarding self-care management skills, the usage of medication delivery device or given answers in such a way as to please the researcher (Ahn et al., 2020, 2020; Hegelund et al., 2020; Rang et al., 2022).

Recall bias might have been an issue. This is because some participants did not respond to follow up questions 6 months after education session. The study indicated that participants may have forgotten or could not recall responding to questions that required evaluating their initial respond 6 months prior (Bricard & Or, 2019; Melender et al., 2020).

Selection bias was also an issue in the studies. This is because randomization was not applied in all level of selection in the studies. Furthermore, selection bias was possible from participants interviews that targeted COPD patients only from one location (Ahn et al., 2020; Barnestein-Fonseca et al., 2023; Clark et al., 2020; Coffey et al., 2019; Hong et al., 2019; Vázquez-González et al., 2023).

Internal Validity

The internal validity measures how well the findings across studies support teach-back method on improving COPD patient outcomes. Internal validity was enhanced through the criteria used to select the 21 studies, including their structures and the accuracy of the results. The analysis procedures applied across the different studies were rigorous and enhanced the trustworthiness of the study results. The variable changes across the control and the observational groups within studies were from reviews, quasi-experimental studies, and meta-analysis (Toronto & Remington, 2020). In this IR, findings across studies were from high quality and well-designed studies.

Appraisal Tools

Appraisal tools were vital in evaluating the reliability, applicability, and significance of clinical evidence across the studies. The PRISMA tool (see Appendix E) was utilized to filter and organize articles considered for inclusion in the review. Melnyk's hierarchy of evidence (see Appendix F) was also used to assess the selected articles based on methodological quality of the study design, validity, and applicability to the care of COPD patients (Melnyk & Fineout-Overholt, 2015; Toronto & Remington, 2020). All 21 articles revealed that the use of the teach-back method had a significant impact on the improvement of self-management strategies, quality of life, and reduction of hospital readmission rates in patients with COPD. The appraisal was conducted to ensure the studies focused on the research topic and that valid methods of research were used.

Applicability of Results

The applicability of these studies were crucial factor considered during the IR. The articles' applicability was evaluated when the study's findings were being collected and during

the review of the studies' populations, settings, and interventions (Toronto & Remington, 2020). The applicability of results could have been limited due to the small number of studies selected. Also, the focus on the teach-back method when applied by care providers could have influenced the results due to the failure of some clinicians to give proper teach-back education to patients. Also, the treatment of COPD is at times a problem in areas of clinical practice or healthcare facilities that are faced with a lack of standardized strategies and hard-to-reproduce similar results for every patient. This issue was resolved via the thorough and unbiased selection of studies through thorough scrutiny.

Reporting Guidelines

Reporting across these studies for this IR involved a provision of the checklists, structured text, and flow diagram that makes the study appropriate for use by the reader, researchers, and clinicians as well as for systematic reviews. The writing and presentation of the study were clear and ensured that every reader would locate their target information with ease. Use of PRISMA (see Appendix E) was the model of data selection applied (Toronto & Remington, 2020).

Section Five: Data Analysis and Synthesis

Thematic Analysis

Thematic data analysis was employed for this IR . The method is used to analyze qualitative data (Toronto & Remington, 2020; Whittemore & Knafl, 2005). For this study, it was utilized to identify common themes across studies. It is a method used to understand patterns within every study by making comparisons with other studies. This method allows the researcher to depict differences or similarities across the data sets. The IR was aimed at conveying the influence of the teach-back method on the improvement of COPD patient outcomes.

Thematic analysis involves six phases: familiarizing oneself with data, which allows the reviewer to generate codes; generating initial codes, searching for themes, reviewing themes, defining/naming themes, and producing a report (Toronto & Remington, 2020). In the first phase of this IR, the researcher captured data from 21 articles by reading the studies, gathering data, labeling findings from each article, and keeping records of patterns (Toronto & Remington, 2020). In the first phase thematic analysis, the 21 articles were verified to fit the inclusion/exclusion criteria depicted in the PRISMA chart (see Appendix E). The selected articles were read, evaluated for validity, and organized in the literature matrix (see Appendix A). The article matrix includes the title of the study, evidence type, sample, sample size, findings, observable measures, limitations, and Melnyk's level of evidence. The creation of a matrix was an easy strategy for synthesis of data that were obtained from each article (Page et al., 2021; Toronto & Remington, 2020).

The second phase included the second through fifth steps of the thematic analysis (Toronto & Remington, 2020). Use of Melnyk's levels of evidence along with the literature matrix facilitated the consistent synthesis of data obtained from each study. Patterns related to the impact of teach-back method were identified and coded; then, the trends were further organized into to themes and subthemes that were sorted, grouped, organized in Microsoft Excel.

The final phase of thematic analysis was to produce the report of the articles' findings, articulating the impact of teach-back method on the improvement of COPD patient outcomes. The thematic analysis data report depicted the repeated concepts across studies and prevalence of each theme and subtheme that was utilized to summarize the evidence that helped to answer the IR questions (Toronto & Remington, 2020; Whittemore & Knafl, 2005). The IR aimed to

identify differences or similarities across the data sets, which allowed the researcher to make inferences from the studies.

The thematic analysis process helped the researcher to identify common themes from the 21 studies selected for the IR on teach-back method for COPD patients (Toronto & Remington, 2020). The main themes that were identified across studies are: (a) impact of teach-back method on error reduction for medication delivery devices and improved health care knowledge recall and retention; (b) improved COPD self-management strategies reduced hospital readmissions for patients who participated in teach-back; (c) COPD patients exposed to teach-back had improved psychological and emotional health outcomes and enhanced quality of life; (d) shared decision-making between the health care provider and patient improved COPD patients' engagement in their treatment plan; (e) comprehension of the disease treatment/management modalities reduced the frequency of health care use in COPD patients who participated in the teach-back method, and (f) health providers should utilize teach-back in every patient visit (Ahn et al., 2020; Hong et al., 2019; Mashhadi et al., 2021; Shnaigat et al., 2021).

Descriptive Results

A comprehensive search for high-quality evidence was conducted via JFL, which provided access to multiple databases. An initial literature search provided 525 articles. Before screening, 300 duplicated articles were removed, leaving 225 articles. The search results were further refined using Boolean operators (e.g., AND, OR) and inclusion/exclusion criteria, such as Level I, II, III, and IV articles, population (i.e., patients diagnosed with COPD), intervention (i.e., teach-back method), and outcome measures (e.g., knowledge retention, self-management skills). After these criteria were applied, 21 articles remained; 504 were eliminated in the process (Melnyk & Fineout-Overholt, 2015; Toronto & Remington, 2020). The articles selected used

research designs like descriptive, experimental, correlational, and quasi-experimental. The PRISMA tool was utilized to filter and organize the selected articles (see Appendix E).

Peer-reviewed articles published in English language within the past 5 years that focused on patients 18 years of age and older were ideal for the IR. Males and females from diverse ethnic backgrounds were included in the study . In addition, articles that were relevant and current and strictly dealing with COPD were considered for the IR (Toronto & Remington, 2020). Among the included studies were randomized controlled trials and observational studies that specifically evaluated the effectiveness of teach-back interventions in improving self-management outcomes among patients with COPD. These studies provided valuable insights into the potential benefits of incorporating teach-back mechanisms into COPD management programs, revealing implications for clinical practice and patient education strategies.

The findings of the IR showed that there were no critical differences in the impact of the teach-back method related to patients' education, age, residence, or gender. Twelve articles focused on the impact of the teach-back method on improving COPD self-management strategies, adherence to treatment plans, and quality of life. The other nine articles focused on the impact of teach-back on improved compliance in correlation with reduction of hospital readmission rates (Ahn et al., 2020; Barnestein-Fonseca et al., 2023; Bourbeau & Echevarria, 2020; Hegelund et al., 2020; Hong et al., 2019; Mashhadi et al., 2021; Rang et al., 2022; Talevski et al., 2020; Yen & Leasure, 2019).

A comparison of the cognitive scores of the two groups; control and observation showed significant differences. Various studies depicted improvement in self-management categories; self-care skills, self-concept, self-care responsibilities, and health knowledge in the observation group compared to the control group. According to the scores of mental health assessments,

anxiety, anger, and depression were lower among the observational groups compared to the control groups. The results from articles indicated a reduction in hospital readmission rates in the group who participated in teach-back method compared to the group who participated in standard education (Ahn et al., 2020; Barnestein-Fonseca et al., 2023; Bourbeau & Echevarria, 2020; Hegelund et al., 2020; Hong et al., 2019; Mashhadi et al., 2021; Rang et al., 2022; Talevski et al., 2020; Toronto & Remington, 2020; Yen & Leasure, 2019).

Synthesis

Data gathered across the selected studies were synthesized using several methods including qualitative data synthesis, mixed methods synthesis, and narrative summary. Six themes were identified related to improving COPD patient outcomes using the teach-back method. The themes that were identified across studies are: (a) proper medication ; (b) comprehension of the disease process; (c) impact of the teach-back method; (d) importance of patience participation; (e) importance of managing the disease; and (f) effectiveness and applicability (Ahn et al., 2020; Hong et al., 2019; Mashhadi et al., 2021; Shnaigat et al., 2021).

Theme 1: Proper Medication Technique

Theme 1 reveals the importance of letting COPD patients demonstrate the proper technique for using medication delivery devices such as spacers and nebulizer machines during education sessions. Barnestein-Fonseca et al. (2023) described observable errors, as COPD patients were not exhaling completely before inhaling, which caused them to lack the strength for optimal inhalation. In this quantitative observational study, 221 COPD patients demonstrated the correct performance inhalation technique after getting trained by the health care provider. The results indicated that teach-back approach reduced proportion of critical error in medication delivery devices (Barnestein-Fonseca et al., 2023). Similarly, Ahn et al. (2020) conducted a

prospective cohort observational study that included 261 COPD patients from a pulmonary outpatient clinic in South Korea. In this study, patients demonstrated a reduced proportion of critical errors and improved compliance level after two teach-back educational sessions. Multiple studies have demonstrated that the teach-back method for COPD patient education increased participants' knowledge, retention, recall, and confidence level in performance of the skill. The teach-back approach involves the COPD patient repeating provided information back to the health care provide and demonstrating proper techniques, ensuring that the patient comprehends and retains key concepts related to the disease process, preventative measures, and treatment regimens (Ahn et al., 2020; Barnestein-Fonseca et al., 2023; Mashhadi et al., 2021; Talevski et al., 2020; Yen & Leasure, 2019).

Theme 2: Comprehension of the Disease Process

Theme 2 signified that comprehension of the disease process and treatment regimens is essential for the enhancement of COPD self-care strategies. Rang et al. (2022) described the efficacy of empowering COPD patients to engage in managing the condition. This randomized controlled trial examined the impact of the teach-back model on the life of COPD patients. The results revealed a significant increase in self-care skills, self-care responsibility, self-concept, and health knowledge level in observation group (Rang et al., 2022). This finding emphasizes the importance of the health care provider clarifying/verifying COPD patient comprehension and to reeducate whenever necessary (Barnestein-Fonseca et al., 2023). The results indicated that patients with enhanced knowledge of the disease process, and self-care strategies had reduced readmission rates (Barnestein-Fonseca et al., 2023; Bourbeau & Echevarria, 2020; Bricard & Or, 2019; Clark et al., 2022; Coffey et al., 2019; Hegelund et al., 2020; Melender et al., 2020; Rang et al., 2022; Vázquez-González et al., 2023).

Theme 3: Impact of the Teach-Back Method

Theme 3 centered on the impact of the teach-back method in improving quality of life in COPD patients. The theme supports utilization of teach-back method, as when COPD patients understand the disease process and preventative measures, they are less anxious and more likely to comply with treatment plan. Rang et al. (2022) conducted a randomized controlled trial that examined an interactive approach utilized by health care providers. The results indicated patients who participated in the teach-back method had significantly improved COPD-related knowledge, self-care ability, and quality of life compared to the control group. These improvements allow COPD patients to manage symptoms of dyspnea and exhaustion, hence decreasing mental distress/panic attacks. Active patient participation in management of COPD is crucial for improved COPD treatment outcomes; patients should be skilled in identification of early symptoms of the disease, adherence to medication regimens, and proper technique in the use of inhaler devices such as spacers and nebulizer machines (Hong et al., 2019; Rang et al., 2022; Shnaigat et al., 2021; Talevski et al., 2020; Yen & Leasure, 2019).

Theme 4: Importance of Patience Participation

Theme 4 focused on the importance of patient participation in the management of their COPD and attendance at follow-up appointments as recommended by the health care provider. This theme supports active communication between the COPD patient and the health care provider. Strong communication enables the health care provider to assess the patient and determine the need to adjust treatment regimen. Hong et al. (2019) conducted a matched cohort study that examined the correlation between patients who had an exposure to teach-back in outpatient clinics and those who did not. The study discussed patients who are at high risk for hospital admission/readmission and prolonged hospitalization. The results demonstrated that

COPD patients who had teach-back experience in every visit with healthcare provider were less likely to be admitted for COPD-related exacerbations and are at lower risk for readmission. However, the study did not detect the difference in length of hospitalization between two groups (Hong et al., 2019).

Likewise, Bricard and Or (2019) conducted a quantitative observational study that examined the importance of patient follow-up with health care providers post hospital discharge. The study included 28,848 hospitalized patients age 65 or older with congestive heart failure. The results indicated that participants who had follow up with healthcare provider after discharge, had 50% reduction in risk for readmission rate within 28 days of discharge for patients with chronic conditions. This pilot study was conducted in France, which improved congestive heart failure patients' follow-up with primary care providers in an effort to reduce health care expenditures. The study demonstrated the efficacy of enhanced communication between patients and health care providers, as well as the essential role both parties play to improve the well-being of patients with chronic conditions such as COPD. Effective communication empowers COPD patients to take charge of their own health, which has a positive impact on compliance, outcomes, quality of life, and readmission rates (Bricard & Or, 2019; Hong et al., 2019; Rang et al., 2022; Talevski et al., 2020; Yen & Leasure, 2019).

Theme 5: Importance of Managing the Disease

Theme 5 highlights the importance of managing COPD, as it impacts the frequency of health care use and hospitalization. Clark et al. (2022) conducted a retrospective observational study that examined the correlation between low peak inspiratory flow with frequency of health care use and hospitalization. The study evaluated the electronic health record data of 743 hospitalized COPD patients. Follow up visits were performed post-discharge. The results

demonstrated the benefit of COPD management on the reduction of hospital readmission rates. Disease management strategies have an impact on COPD patients' outcomes. The teach-back approach reinforces information on self-care skills/strategies; it is crucial for COPD patients to demonstrate proper inhalation technique when using medication device prior to discharge from the hospital. Correct use of a medication device can be instructed by a health care provider or nurse if improper technique was performed (Benzo & McEvoy, 2019; Bourbeau & Echevarria, 2020; Hong et al., 2019; Issac et al., 2020).

Similarly, Buhr et al. (2020) conducted evaluated 30-day readmission rates in COPD patients. The data were collected from the Nationwide Readmissions Database for 1,622,983 hospitalized COPD patients. The results demonstrated that COPD patients who are readmitted within 30 days post discharge are due to non-COPD related illnesses because of disease complication comorbidities that are seen in COPD patients with advance disease. COPD patients tend to face episodes of exacerbations that are caused by other conditions as results of disease-related complications, such as congestive heart failure and pulmonary infections. It is crucial that COPD patients understand preventative measures to decrease frequent exacerbation to lower the risk of readmission. The teach-back method is an effective approach, as it allows health care providers to assess patients' comprehension of educational materials and information (Benzo & McEvoy, 2019; Bourbeau & Echevarria, 2020; Clark et al., 2022; Coffey et al., 2019; Hegelund et al., 2020; Hong et al., 2019; Owusuaa et al., 2022).

Theme 6: Effectiveness and Applicability

Theme 6 in this IR is the effectiveness and applicability of teach-back method across health care practices. For instance, Hong et al. (2019) conducted a matched cohort study that included 3,994 patients older than 18 years old. This pilot study examined the impact of a

simplified, individualized action plan presented using the teach-back method for discharged COPD patients. The results demonstrated the reduction in readmission rates in patients who had individualized COPD action plan education at discharge utilizing teach-back approach. Among those who participated in the study, 30% never experienced teach-back with their health care provider. The study demonstrated the key role health care providers play in improving COPD patient outcomes utilizing the teach-back method. The teach-back method requires health care providers across practices to remind COPD patients on the importance of follow-up post-discharge (Hong et al., 2019).

Hegelund et al. (2020) conducted a randomized controlled trial that examined the impact of an individualized action plan for COPD that was provided at discharge using the teach-back method. This pilot study included 75 participants. The results indicated a significant reduction in readmission rates and feelings of despair. The data across studies showed that the teach-back method was a simple but practical model of helping patients develop self-management skills. This would serve as a critical tool for the COPD patients once they are discharged from the hospitals. The method is widely used across clinical settings and can help patients with COPD and other chronic illnesses to develop resilience and self-reliance. Multiple studies showed that participants score higher in self-care skills, self-concept, self-care responsibilities, and health knowledge among the observation group compared to the control group (Benzo & McEvoy, 2019; Hong et al., 2019; Mashhadi et al., 2021; Rang et al., 2022; Talevski et al., 2020; Yen & Leasure, 2019).

The teach-back method was found to improve error recognition, continuous cognition, and recognition of the disease process, which led to enhanced self-management abilities across the studies. Yen and Leasure (2021) conducted a systematic review that investigated the impact

of the teach-back method on patient health outcomes. The study utilized PRISMA and Whittemore and Knafl' s (2005) methodology for conducting an IR. Overall, this IR confirmed the effectiveness of the teach-back method in improving patients' knowledge, satisfaction with medication instructions, acknowledgments of error in using medication delivery devices, and perceptions of self-care management.

The teach-back model further helped by stimulating the patients' subjective initiative to seek early medical intervention and helped improve their compliance with their treatment regimen. The studies found that patients suffering from COPD present with reduced motor functions as a result of somatic symptoms, which caused the patients to lose their self-care abilities and even their ability to work. Thus, when the teach-back method is used, patients experience improved cognition and enhanced compliance with their treatment plan. The articles also found that when the teach-back method is used, the incorporation of an individualized action plan for COPD patients leads to greater compliance with disease management strategies and improved quality of life (Ahn et al., 2020; Barnestein-Fonseca et al., 2023; Bourbeau & Echevarria, 2020; Hegelund et al., 2020; Hong et al., 2019; Mashhadi et al., 2021; Rang et al., 2022; Talevski et al., 2020; Yen & Leasure, 2019).

Ethical Considerations

The project was submitted to the Liberty University Institutional Review Board (IRB) to ensure it met IRB ethical and legal standards. The project obtained an exempt status from the Liberty University IRB since human subjects were not involved the in the study (see Appendix C). The researcher completed training via the Collaborative Institutional Training Initiative (CITI) to ensure compliance with regulations set by the National Institutes of Health and Liberty University related to the protection of human subjects involved in the study (see Appendix B). In

addition, the studies selected were carried out with consideration of the participants' privacy and personal safety. The studies required participants to fill out consent forms to show they agreed to take part in the study. In addition, the studies selected had assured participants of their anonymity (Toronto & Remington, 2020).

Timeline

The study was completed within a 6-month timeframe (see Appendix D). Sections One to Three of the IR, along with a PowerPoint presentation, were completed in NURS947 during the spring semester Term B in 2024. Also, during the 2024 spring semester, the application for IRB approval was submitted, and the study obtained an exempt status. The project proposal defense was completed in NURS948 during the spring semester Term D in 2024. The final draft of the project defense was completed summer semester 2024 Term B in NURS949. The preliminary defense project was submitted to the editor on July 10 in NURS950 during summer Term D. The final oral final defense was scheduled for July 18 in summer Term D 2024 in NURS950. The final manuscript will be submitted to Liberty Scholars Crossing by July 26 in Term D of the 2024 summer semester in NURS950.

Section Six: Discussion

Implications for Practice/Future Work

As indicated in this the IR, multiple study findings have demonstrated that the teach-back method is ideal for nurses and other healthcare providers in providing education about COPD self-management for institutions, communities, families, and patients. The literature reviews showed that the teach-back model has the potential to improve COPD patients' understanding of critical aspects of their health and enhance quality of life (Ahn et al., 2020; Mashhadi et al., 2021; Talevski et al., 2020; Yen & Leasure, 2019). The IR analyzed 21 studies,

and the PRISMA tool was utilized to filter and organize selected studies (see Appendix E). Melnyk's hierarchy of evidence was also used to assess the selected studies based on methodological quality of the study design, validity, and applicability to the care of COPD patients (see Appendix F; Melnyk & Fineout-Overholt, 2015; Toronto & Remington, 2020). The Whittemore and Knafl (2005) conceptual framework for conducting an IR, which outlined five phases, was also utilized. Ample evidence was provided for the six themes that were identified.

The evidence that answered the IR questions was organized in a literature matrix (see Appendix A), assessed based on Melnyk's levels of evidence (see Appendix F), and selected using the PRISMA tool (see Appendix E). In the process of the data appraisal, six themes were generated that underpin the impact of the teach-back method as an educational approach to improve COPD patient outcomes. These themes are: impact of the teach-back method in error reduction for medication delivery devices and improved health care knowledge recall and retention (Ahn et al., 2020; Barnestein-Fonseca et al., 2023; Mashhadi et al., 2021; Talevski et al., 2020; Yen & Leasure, 2019); improved COPD self-management strategies reduced hospital readmissions for patients who participated in teach-back (Barnestein-Fonseca et al., 2023; Benzo & McEvoy, 2019; Bourbeau & Echevarria, 2020; Bricard & Or, 2019; Clark et al., 2022; Coffey et al., 2019; Hegelund et al., 2020; Melender et al., 2020; Rang et al., 2022; Vázquez-González et al., 2023); COPD patients exposed to teach-back saw improved psychological and emotional health outcomes and enhanced quality of life (Hong et al., 2019; Rang et al., 2022; Shnaigat et al., 202; Talevski et al., 2020; Yen & Leasure, 2019) ; shared decision-making between patients and health care providers improved COPD patients' engagement in their own care (Bricard & Or, 2019; Hong et al., 2019; Rang et al., 2022; Talevski et al., 2020; Yen & Leasure, 2019); comprehension of disease treatment/management strategies reduced the frequency of health care

use in COPD patients who participated in the teach-back method (Clark et al., 2022; Coffey et al., 2019; Mashhadi et al., 2021) and health providers should utilize the teach-back method in every patient visit (Hong et al., 2019; Mashhadi et al., 2021; Rang et al., 2022; Talevski et al., 2020; Yen & Leasure, 2019).

Q1. In COPD patients, does utilization of the teach-back method impact adherence to treatment plans?

The evidence revealed in this IR demonstrates that the teach-back method impacts COPD patients' adherence to their treatment plans. The teach-back method has emerged as a valuable and effective patient education approach that can be utilized across health care practices. For instance, Ahn et al. (2020) conducted a prospective cohort study to evaluate inhaler performance technique and adherence to treatment for 261 COPD patients. The study concluded that the teach-back method is associated with a reduction of critical errors in the use of medication administration devices and improved adherence to treatment. Barnestein-Fonseca et al. (2023) conducted an observational study to evaluate the competence in proper inhalation technique (pertaining to breathing technique for COPD patients) for 660 participants. This study concluded that the teach-back method improves the efficacy of inhalation techniques for COPD patients. Improved knowledge of a COPD patient's condition increases their adherence to their treatment regimen. Benzo and McEvoy (2019) conducted a randomized study with convenience sample of 215 hospitalized COPD patients from multiple sites; follow-up was conducted weekly for 3 months post-discharge to measure COPD patients progress in self-care management strategies. The study concluded that the teach-back approach is effective in improving self-management abilities, self-care ability, and quality of life as the COPD patient adheres to the treatment plan

post-education session (Ahn et al., 2020; Benzo & McEvoy, 2019; Hong et al., 2019; Rang et al., 2022; Vázquez-González et al., 2023).

The studies' implications are that the teach-back method is an ideal approach for nurses and other health care providers to provide education about COPD self-management for institutions, communities, families, and patients. The IR showed that the teach-back model has the potential to improve patients' understanding of critical aspects of their health and also enhance quality of life, especially for those suffering from COPD. The power of teach-back should be harnessed across all health care institutions to give patients education about self-care and self-management related to COPD, which will ideally reduce clinical visits and health care costs (Bricard & Or, 2019; Barnestein-Fonseca et al., 2023; Bourbeau & Echevarria, 2020).

Q2. In COPD patients, what is the impact of using the teach-back method on hospital readmission rates?

The use of the teach-back model led to reduced rates of readmission and hospitalizations for patients with COPD and other chronic illnesses. The IR revealed that nurses can provide patients vital self-management skills to slow disease progression and also minimize mortality related to COPD by using the teach-back method to educate patients at the hospital level. Mashhadi et al. (2021) conducted a systematic review to evaluate the impact of teach-back on hospital readmission rates. The study concluded that the teach-back method is an effective approach to reduce preventable hospitalizations. Talevski et al. (2020) conducted a systematic review study to synthesize the evidence on the application of the teach-back method into practice. The study concluded that the teach-back method is effective in several areas, including in reducing unnecessary hospital admissions/readmissions for patients with chronic illnesses (Barnestein-Fonseca et al., 2023; Bourbeau & Echevarria, 2020; Hong et al., 2019).

The IR showed that a proper implementation of the teach-back method in the clinical setting is possible only when the nurses are involved. The implementation requires multi-faceted approaches in which all clinical leaders and managers, as well as all departments, achievement agencies, and sponsors, are available (Issac et al., 2020; Talevski et al., 2020). This would be possible through the availability of detailed structures and frameworks about how teach-back education works and the persons responsible for implementing it across every department in a hospital. Authors across the studies in this review established the need for a multidisciplinary approach in enhancing the use of the teach-back model in clinical and patient care. The studies provide a practical model through which issues regarding COPD patients' readmissions and hospitalizations after discharge will be greatly reduced. The patients and their families should also be consistently exposed to this method to ensure that even when they leave the hospital, they are able to influence others with the same method (Abas et al., 2020; Bricard & Or, 2019; Buhr et al., 2020; Clark et al., 2022; Coffey et al., 2019; Hegelund et al., 2020; Mashhadi et al., 2020).

Doctor of Nursing Practice Essentials

The Doctor of Nursing Practice (DNP) degree prepares nurses to take different roles in health care. It is vital that the DNP graduate acquire fundamental competencies that ensure success in practice. The American Association of Colleges of Nursing outlines eight essentials, or core competencies, of the DNP curriculum. These essentials are crucial for practice in different settings (Zaccagnini & Pechacek, 2021). The DNP Essentials that were identified as pertinent to this IR were Essential III: clinical scholarship and analytical methods for evidence-based practice and Essential VI: interprofessional collaboration for improving patient and population health outcomes (see Appendix F; American Association of Colleges of Nursing, 2006).

Essential III applies to this IR because an evidence-based educational approach is necessary to improve COPD patient outcomes. The results of the IR support the implementation of the teach-back method because of its effectiveness in improving patients' knowledge of the disease process and preventative measures. The teach-back method, which involves patients repeating back instructions or demonstrating a skill, has emerged as valuable strategy to ensure that patient understands and retains key concepts (Mashhadi et al., 2021). In the IR analysis, it was noted that the factors contributing to the high readmission rates in COPD patients include the severity of the disease, lack of understanding about the disease, inadequate follow-up care, and failure to identify those patients at high risk for readmission. As such, the quality of a patient's comprehensive educational approach is crucial for positive outcomes for COPD patients. Therefore, addressing these factors and implementing effective, evidence-based disease management strategies are crucial to reducing hospital readmission rates, improving self-management strategies, and increasing adherence to treatment plans in COPD patients (Ahn et al., 2020; Barnestein-Fonseca et al., 2023; Benzo & McEvoy, 2019; Hong et al., 2019; Melender et al., 2020; Yen & Leasure, 2019).

Essential VI applies to this IR as implicated in multiple study results that health care providers play a crucial role in providing holistic, patient-centered care. Collaboration among health care providers facilitates access to resources and encourages high-quality, safe, and cost-effective care for COPD patients, which is crucial in reducing health care expenditures. Among patients hospitalized for COPD, readmissions as a result of exacerbation shortly following their discharge continues to be an issue (Abas et al., 2020). The DNP must collaboratively contribute to initiatives seeking to decrease hospital readmission rates and improve quality of life for COPD patients. The results of this IR support the teach-back method as the best approach for health care

providers to clarify/identify a patient's comprehension of instructions and emphasize the importance of follow-up with health care providers and pulmonary rehabilitation post-discharge from the hospital. Within the IR, various studies recommended implementation of an evidence-based, standardized education protocol for patients with COPD to provide consistency of care across health care practices (Boers et al., 2023; Bourbeau & Echevarria, 2020; Buhr et al., 2020; Coffey et al., 2019; Hegelund et al., 2020; Hong et al., 2019; Mashhadi et al., 2021).

Dissemination

The completed IR will be submitted to Liberty University's Scholars Crossing and presented at the Virginia Henderson Research Symposium in November 2024. The findings from the studies were overwhelming in terms of the positive patient outcomes and the ability of the patients to develop self-care and management abilities through the teach-back method. The use of the teach-back method is a crucial step toward improved patient outcomes and is applicable to other areas of clinical practice. The results can be generalized to other patients suffering from COPD since the study results were positive and emanated from diverse studies. The rigorous methodology and non-biased selection of these studies for the review make it valid and credible for application to other areas of clinical practice. However, the study had some limitations that may hinder its replication and dissemination to other departments apart from pulmonary unit or clinic. Most studies sample sizes were collected from either a single hospital pulmonary unit or in outpatient pulmonary clinic, which may not give a clear picture about the feasibility of this intervention for COPD patients who are hospitalized in different departments or sees the provider in the different specialty or practice (Hegelund et al., 2020; Rang et al., 2022; Shnaigat et al., 2021). As such, a large sample that includes sample from diverse practices and different hospital departments should be considered for a future research study on this topic.

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Benzo, R., & McEvoy, C. (2019). Effect of health coaching delivered by a respiratory therapist or nurse on self-management abilities in severe COPD: Analysis of a large, randomized study. *Respiratory Care, 64*(9), 1055–1072. https://doi.org/10.4187/respcare.05927

Boers, E., Barrett, M., Su, J. G., Benjafield, A. V., Sinha, S., Kaye, L., Zar, H. J., Vuong, V., Tellez, D., Gondalia, R., Rice, M. B., Nunez, C. M., Wedzicha, J. A., & Malhotra, A. (2023). Global burden of chronic obstructive pulmonary disease through 2050. *JAMA*

Network Open, *6*(12), Article e2346598. https://doi.org/10.1001/jamanetworkopen.2023.46598

Bourbeau J., & Echevarria, C. (2020). Models of care across the continuum of exacerbations for patients with chronic obstructive pulmonary disease. *Chronic Respiratory Disease*, *17*. https://doi.org/10.1177/1479973119895457

Bricard, D., & Or, Z. (2019). Impact of early primary care follow-up after discharge on hospital readmissions. *The European Journal of Health Economics, 20*(4), 611–623. https://doi.org/10.1007/s10198-018-1022-y

Buhr, R. G., Jackson, N. J., Dubinett, S. M., Kominski, G. F., Mangione, C. M., & Ong, M. K. (2020). Factors associated with differential readmission diagnoses following acute exacerbations of chronic obstructive pulmonary disease. *Journal of Hospital Medicine, 15*(4), 219–227. https://doi.org/10.12788/jhm.3367

Clark, B., Wells, B. J., Saha, A. K., Franchino-Elder, J., Shaikh, A., Donato, B. M. K., & Ohar, J. A. (2022). Low peak inspiratory flow rates are common among COPD inpatients and are associated with increased healthcare resource utilization: A retrospective cohort study. *International Journal of Chronic Obstructive Pulmonary Disease, 17*, 1483–1494. https://doi.org/10.2147/COPD.S355772

Coffey, A., Leahy-Warren, P., Savage, E., Hegarty, J., Cornally, N., Day, M. R., Sahm, L., O'Connor, K., O'Doherty, J., Liew, A., Sezgin, D., & O'Caoimh, R. (2019). Interventions to promote early discharge and avoid inappropriate hospital (re)admission: A systematic review. *International Journal of Environmental Research and Public Health*, *16*(14), Article 2457. https://doi.org/10.3390/ijerph16142457

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Hong, Y.-R., Cardel, M., Suk, R., Vaughn, I. A., Deshmukh, A. A., Fisher, C. L., Pavela, G., & Sonawane, K. (2019). Teach-back experience and hospitalization risk among patients with ambulatory care sensitive conditions: A matched cohort study. *Journal of General Internal Medicine*, *34*(10), 2176–2184. https://doi.org/10.1007/s11606-019-05135-y

Issac, H., Moloney, C., Taylor, M., & Lea, J. (2020). Mapping of modifiable barriers and facilitators with interdisciplinary chronic obstructive pulmonary disease (COPD) guidelines concordance within hospitals to the theoretical domains framework: A mixed methods systematic review protocol. *BMJ Open, 10*, Article e036060. https://doi.org/10.1136/bmjopen-2019-036060

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Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., . . . Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ, 372,* Article 71. https://doi.org/10.1136/bmj.n71

Rang, J., Peng, L., Wen, L., Zhou, Z., Xia, Y., Xie, C., Xie, T., & Tan, J. (2022). The effect of teach-back combined with king interactive standard mode on the life of COPD patients. *Contrast Media & Molecular Imaging*, *2022*. https://doi.org/10.1155/2022/4638745

Shnaigat, M., Downie, S., & Hosseinzadeh, H. (2021). Effectiveness of health literacy interventions on COPD self-management outcomes in outpatient settings: A systematic review. *COPD: Journal of Chronic Obstructive Pulmonary Disease*, *18*(3), 367–373. https://doi.org/10.1080/15412555.2021.1872061

Talevski, J., Wong Shee, A., Rasmussen, B., Kemp, G., & Beauchamp, A. (2020). Teach-back: A systematic review of implementation and impacts. *PLOS ONE*, *15*(4), Article e0231350. https://doi.org/10.1371/journal.pone.0231350

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Vázquez-González, N., Leiva-Fernández, J., Cotta-Luque, V. M., Leiva-Fernández, F., Rius-Díaz, F., Martos-Crespo, F., Martín-Montañez, E., & Barnestein-Fonseca, P. (2023). Effectiveness of an educational intervention about inhalation technique in healthcare professionals in primary care: a cluster randomized trial. *Frontiers in Pharmacology*, *14*, Article 1266095. https://doi.org/10.3389/fphar.2023.1266095

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Yen, P. H., & Leasure, A. R. (2019). Use and effectiveness of the teach-back method in patient education and health outcomes. *Federal Practitioner*, *36*(6), 284–289. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6590951/

Zaccagnini, M., & Pechacek, J.M. (2021). *The doctor of nursing practice essentials: A new model for advanced practice nursing* (4th ed.). Jones & Bartlett Learning.

Appendix A

Article Critique and Leveling Matrix

Author and Date	Evidence Type	Sample, Sample Size, Setting	Findings	Observable Measures	Limitations	Evidence Level
Abas, M. I., Zubir, M. Z., Ishak, M. F. M., Hassim, N. H. N., Hanan, M. F. M., BanYu-Lin, A., Manaf, M. R. A., Ismail, A., Nur, A. M., & AlJunid, S. M. (2020). Patients' characteristics and outcomes analysis of COPD readmissions in a teaching hospital in Kuala Lumpur, Malaysia. *International Medical Journal*, *27*(6), 705–708.	Quantitative observational study	1,446,431 chronic obstructive pulmonary disease (COPD)-related weighted hospitalizations from the Nationwide Readmissions Database (2016-2019)	COPD and cachexia patients experience worse inpatient outcomes, including higher complications, longer stays, and increased mortality compared to those without cachexia.	Inpatient complications, length of stay, in-hospital mortality	The analysis lacks detailed information on specific patient interventions or treatments, and potential confounding factors are not accounted for.	Level II
Ahn, J. H., Chung, J. H., Shin, K.-C., Jin, H. J., Jang, J. G., Lee, M. S., & Lee, K. H. (2020). The effects of repeated inhaler device handling education in COPD patients: A prospective cohort study. *Scientific Reports*, *10*(1), Article 19676. https://doi.org/10.1038/s41598-020-76961-y	Quantitative observational study	261 COPD patients were included.	The study found out that education greatly reduced the proportion of critical errors after giving two educational sessions. Critical errors were reduced from 43.32% to about 88%.	The number of compliant patients increased significantly by getting this intervention. Those using other instruments did not make significant improvements.	The study was lacking a control group; hence selection bias was inevitable.	Level II

Barnestein-Fonseca, P., Cotta-Luque, V. M., Aguiar-Leiva, V. P., Leiva-Fernández, J., Martos-Crespo, F., & Leiva-Fernández, F. (2023). The importance of reminders and patient preferences to improve inhaler technique in older adults with COPD. *Frontiers in Pharmacology*, *13*, Article 989362. https://doi.org/10.3389/fphar.2022.989362	Quantitative observational study	726 patients with pulmonary disease were selected for the study.	It was observed that about 660 participants were unable to perform the correct inhalation techniques at baseline. After 12 months it was evident that 221 patients were able to adequately perform the correct inhalation techniques.	Observable errors included patients not exhaling completely before inhaling; shortness of breath after inhalation; and most had no optimal strength of inhalation.	The missing data exposed the study to poor accuracy; also, the study was affected by selection bias.	Level II
Benzo, R., & McEvoy, C. (2019). Effect of health coaching delivered by a respiratory therapist or nurse on self-management abilities in severe COPD: Analysis of a large, randomized study. *Respiratory Care*, *64*(9), 1055–1072. https://doi.org/10.4187/respcare.05927	Randomized controlled trial	215 hospitalized COPD patients from multi-sites assigned to control or intervention group.	Patients assessed shortly after discharge at baseline, then follow up weekly for 3 months, thereafter monthly. The study found improved self-management abilities after coached by healthcare provider; 55% had at least 0.5-point increased compared to control group 38% at 6 months.	Coaching provided by nurse or respiratory therapist improved self-management abilities: self-efficacy, decreased anxiety and panic attacks.	At 12 months there was no compelling difference between two groups. This was attributed re-hospitalization and decreased frequency of visits by nurses and respiratory therapy at 3 months	Level II

Bricard, D., & Or, Z. (2019). Impact of early primary care follow-up after discharge on hospital readmissions. *The European Journal of Health Economics, 20*(4), 611–623. https://doi.org/10.1007/s10198-018-1022-y	Quantitative observational study	Patients hospitalized for heart failure in France	Consultations with a general practitioner after discharge reduced readmission risk by nearly 50%, and higher ambulatory care utilization was linked to lower readmission odds.	Rate of early consultations with a general practitioner, ambulatory care utilization, geographical disparities in primary care availability	The analysis lacks detailed information on specific patient interventions or treatments, and potential confounding factors are not accounted for.	Level II
Bourbeau J., & Echevarria, C. (2020). Models of care across the continuum of exacerbations for patients with chronic obstructive pulmonary disease. *Chronic Respiratory Disease, 17*. https://doi.org/10.1177/1479973119895457	Review article	60 articles investigated different models of care for COPD patients	Self-management strategies, domiciliary care, and COPD discharge bundles can alleviate admission-related exacerbations, enhance quality of life, and potentially decrease readmission rates.	Utilization of self-management strategies, domiciliary care, and COPD discharge bundles	Lack of original data, potential for bias in the selection and interpretation of studies included in the review	Level I
Boers, E., Barrett, M., Su, J. G., Benjafield, A. V., Sinha, S., Kaye, L., Zar, H. J., Vuong, V., Tellez, D., Gondalia, R., Rice, M. B., Nunez, C. M., Wedzicha, J. A., & Malhotra, A. (2023). Global burden of chronic obstructive pulmonary disease through 2050. *JAMA Network Open,*	Meta-analysis and systematic review	162 COPD prevalence related- studies from 65 countries across the globe; included male and female aged 25 and older	Significant increased COPD cases in years 2020 estimated by 10.6% (480 million) for both males and females, projected 600 million cases worldwide by 2050.	The increase of COPD cases continues to be a global burden in health care expenditure that require allocation of resources.	The study relied on collected data from other studies, likely to have the same limitations from original studies. Also, in developing countries COPD is underdiagnosed reflected by lack of literature.	Level I

6(12), Article e2346598. https://doi.org/10.1001/jamanetworkopen.2023.46598						
Buhr, R. G., Jackson, N. J., Dubinett, S. M., Kominski, G. F., Mangione, C. M., & Ong, M. K. (2020). Factors associated with differential readmission diagnoses following acute exacerbations of chronic obstructive pulmonary disease. *Journal of Hospital Medicine, 15*(4), 219–227. https://doi.org/10.12788/jhm.3367	Quantitative observational study	1,622,983 COPD hospitalizations from the Nationwide Readmissions Database (2010-2016)	Readmissions for 30 days after exacerbations of COPD are frequent, with 55% due to non-COPD diagnoses, and non-COPD patients have a higher comorbidity burden.	Rate of 30-day readmissions, types of diagnoses at readmission, patient demographics	Lack of detailed information on specific interventions or treatments received by patients, potential for confounding factors not accounted for in the analysis.	Level II
Clark, B., Wells, B. J., Saha, A. K., Franchino-Elder, J., Shaikh, A., Donato, B. M. K., & Ohar, J. A. (2022). Low peak inspiratory flow rates are common among COPD inpatients and are associated with increased healthcare resource utilization: A retrospective cohort study. *International*	Retrospective observational study	743 patients suffering from COPD were hospitalized in the health system of Wake Forest Baptist (2017-2020)	Low peak inspiratory flow (PIF) is frequently observed in patients with COPD acute exacerbation and is linked to increased health care resource utilization outcomes.	Low PIF prevalence, variations in PIF following hospitalization, and correlation between low PIF and health care resource utilization outcomes.	Lack of generalizability beyond the specific healthcare system studied potential for confounding factors not accounted for in the analysis.	Level III

Journal of Chronic Obstructive Pulmonary Disease, 17, 1483–1494. https://doi.org/10.2147/COPD.S355772						
Coffey, A., Leahy-Warren, P., Savage, E., Hegarty, J., Cornally, N., Day, M. R., Sahm, L., O'Connor, K., O'Doherty, J., Liew, A., Sezgin, D., & O'Caoimh, R. (2019). Interventions to promote early discharge and avoid inappropriate hospital (re)admission: A systematic review. *International Journal of Environmental Research and Public Health, 16*(14), Article 2457. https://doi.org/10.3390/ijerph16142457	Systematic review	94 eligible papers from academic electronic databases (2005-2018)	The study found mixed results on early discharge and avoidance of inappropriate hospital readmission, with multidisciplinary interventions being most successful in pre- and post-discharge.	Types of interventions categorized based on delivery settings, effectiveness of interventions in avoiding hospital readmissions	The review's selection and interpretation of studies may be biased due to the lack of detailed information on specific interventions examined in individual studies.	Level I
Hegelund, A., Andersen, I. C., Andersen, M. N., & Bodtger, U. (2020). The impact of a personalized action plan delivered at discharge to patients with COPD on readmissions: A pilot study. *Scandinavian Journal of*	Randomized controlled trial	75 participants assigned to intervention or control group	At the 3-month follow-up, a customized action plan that was implemented at or after discharge decreased the burden of COPD-related readmissions as well	Using the Hospital Anxiety and Depression Scale, the study looks into the rates of anxiety and depression, changes in symptom load,	Small sample size, potential for bias due to lack of blinding, limited generalizability beyond the study population	Level II

Caring Sciences, 34(4), 909–918. https://doi.org/10.1111/scs.12798			as the levels of anxiety and despair.	and readmissions due to COPD.		
Hong, Y.-R., Cardel, M., Suk, R., Vaughn, I. A., Deshmukh, A. A., Fisher, C. L., Pavela, G., & Sonawane, K. (2019). Teach-back experience and hospitalization risk among patients with ambulatory care sensitive conditions: A matched cohort study. *Journal of General Internal Medicine, 34*(10), 2176–2184. https://doi.org/10.1007/s11606-019-05135-y	Matched cohort study	3,994 adult participants above 18 years were considered for this study.	Study found out that participants with teach-back experience were less likely to be hospitalized for ambulatory care sensitive conditions – related conditions and also presented with lower risk of getting readmitted when compared with those without teach-back experiences.	It was observed that the length of stay at the hospital was similar to patients with experience of teach-back and to those without any exposure.	It was not possible to measure the level of interaction between the patients and the care providers, selection bias was possible from individual interviews	Level III
Issac, H., Moloney, C., Taylor, M., & Lea, J. (2020). Mapping of modifiable barriers and facilitators with interdisciplinary chronic obstructive pulmonary disease (COPD) guidelines concordance within hospitals to the theoretical domains framework: A mixed methods systematic	Protocol for mixed methods systematic review	N/A	The project intends to investigate factors that influence the concordance of COPD recommendations and to pinpoint obstacles and enablers to the implementation of multidisciplinary interventions in COPD care.	Factors influencing the concordance of COPD recommendations, obstacles and enablers for multidisciplinary therapies, and results of research that were included	Protocol paper, no specific findings reported as it outlines the methodology for a systematic review	Level V

review protocol. *BMJ Open, 10*, Article e036060. https://doi.org/10.1136/bmjopen-2019-036060						
Mashhadi, S. F., Hisam, A., Sikander, S., Rathore, M. A., Rifaq, F., Khan, S. A., & Hafeez, A. (2021). Post discharge mHealth and teach-back communication effectiveness on hospital readmissions: A systematic review. *International Journal of Environmental Research and Public Health, 18*(19), Article 10442. https://doi.org/10.3390/ijerph181910442	Systemic review	1,932 articles were selected after the removal of duplicates. In the end only 17 articles were selected published between 2002 and 2019.	11 out of 17 articles demonstrated significant reduction of hospital readmissions as a result of teach-back method.	Teach-back and mHealth strategies demonstrates improvement towards reducing hospital readmissions.	Search was only restricted to published research work hence risk of publication bias.	Level II
Melender, H.-L., Salmela, S., & Pape, B. (2020). A quasi-experimental study of a basics of evidence-based practice educational intervention for health and social care professionals. *SAGE Open Nursing, 6*. https://doi.org/10.1177/2377960820925959	Quasi-experimental study	48 health and social care professionals in a Finnish hospital.	An educational intervention focusing on the basics of evidence-based practice (EBP) increased participants' knowledge and confidence in conducting database searches and reading scientific articles.	EBP knowledge, confidence in conducting database searches, utilization of databases at work	Low completion rate, quasi-experimental design limits causal inference, potential for bias due to self-report measures	Level III

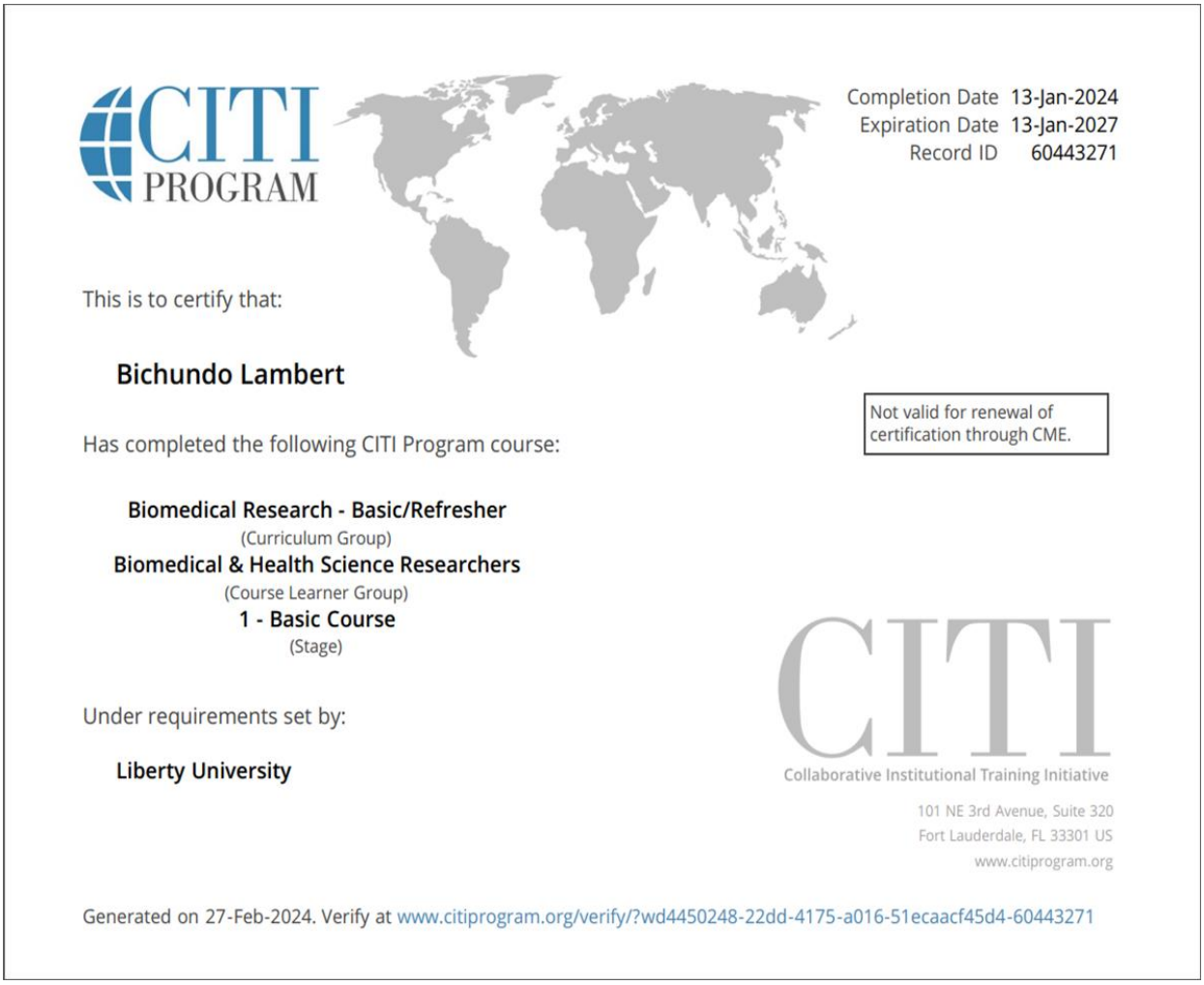
Owusuaa, C., Dijkland, S. A., Nieboer, D., van der Rijt, C. C. D., & van der Heide, A. (2022). Predictors of mortality in chronic obstructive pulmonary disease: A systematic review and meta-analysis. *BMC Pulmonary Medicine*, *22*, Article 125. https://doi.org/10.1186/s12890-022-01911-5	Meta-analysis and systematic review	42 articles that provide prognostic models or predictors for COPD patients' death.	Hospitalization for an acute exacerbation, readmission within 30 days, age, male sex, cardiovascular disease, and long-term oxygen therapy are among the factors that predict mortality in individuals with COPD.	Risk ratios for mortality predictors and multivariable prognostic models' discriminating power.	The heterogeneity of the study, possible publication bias, and variation in the study populations restrict the study's generalizability.	Level I
Rang, J., Peng, L., Wen, L., Zhou, Z., Xia, Y., Xie, C., Xie, T., & Tan, J. (2022). The effect of teach-back combined with king interactive standard mode on the life of COPD patients. *Contrast Media & Molecular Imaging*, *2022*. https://doi.org/10.1155/2022/4638745	Randomized controlled trial	100 participants were selected for this study. 50 cases of control group and 50 cases as an observational group.	The exposure to teach-back model showed improvement in the observation groups after exposure for 3 months and 6 months.	The use of tach-back model together with the King interactive standard mode is able to significantly improve the COPD self-care abilities and reduce psychological emotions and enhance quality of life.	The study was retrospective; hence, selection bias was observed. The sample was small making generalization difficult in addition the study was carried out in only one care center or hospital hence the results are difficult to replicate to other settings.	Level II
Shnaigat, M., Downie, S., & Hosseinzadeh, H. (2021). Effectiveness of health literacy interventions on COPD	Systematic review	Eight databases: Science Citation Index, Academic Search Complete, Social	The results found out that health literacy contributed only moderate improvements in	There was no randomized controlled trial that led to the significant	There was an inadequate data measurement across the trails. The sample size was also small	Level III

self-management outcomes in outpatient settings: A systematic review. *COPD: Journal of Chronic Obstructive Pulmonary Disease*, *18*(3), 367–373. https://doi.org/10.1080/15412555.2021.1872061		Sciences Citation Index, CINAHL Plus, APA PsycInfo, MEDLINE, Scopus and ScienceDirect.	physical activity.	improvement on medication adherence, hence the need for additional studies on the area.	hence possible issues with the results. The findings cannot ne generalized to other patients' settings due to lack of sufficient designs and interventions.	
Talevski, J., Wong Shee, A., Rasmussen, B., Kemp, G., & Beauchamp, A. (2020). Teach-back: A systematic review of implementation and impacts. *PLOS ONE*, *15*(4), Article e0231350. https://doi.org/10.1371/journal.pone.0231350	Systematic review	20 studies of moderate quality were included in this study	Teach-back model was effective in 19 out of 20 articles. Teach-back was established vital in a wide range of settings, populations, and outcome measures.	Use of implementation strategies such as education and training of relevant stakeholders in supporting clinicians will improve sustainability.	Searches were only limited to published articles; hence, publication bias was inevitable. Also, only half of the selected studies were able to present with a detailed description of the implementation of teach-back model.	Level III
Vázquez-González, N., Leiva-Fernández, J., Cotta-Luque, V. M., Leiva-Fernández, F., Rius-Díaz, F., Martos-Crespo, F., Martín-Montañez, E., & Barnestein-Fonseca, P. (2023). Effectiveness of an educational intervention about inhalation technique in healthcare professionals	Cluster randomized clinical trial Randomized controlled trial	A total of 286 patients suffering from COPD were given scheduled inhalation therapy	The study showed about 92% of professionals of patients incorrectly used the inhaler technique.	There is effectiveness of direct inhaler technique training when executed by a trained professional.	There is missing data that might lead to reduced accuracy levels. Randomization was not applied across all the levels of selection that might cause selection bias.	Level II

in primary care: a cluster randomized trial. *Frontiers in Pharmacology, 14*, Article 1266095. https://doi.org/10.3389/fphar.2023.1266095						
Yen, P. H., & Leasure, A. R. (2019). Use and effectiveness of the teach-back method in patient education and health outcomes. *Federal Practitioner*, *36*(6), 284–289. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6590951/	Systematic review	A total of 26 studies were selected from EBSCO CINAHL, Ovid Medline, and PubMed.	All the studies were effective in enhancing the need for teach-back method in promoting patients' knowledge, and self-results indicated the positive side of the teach-back method on patients' satisfaction, acknowledgments, and patients perceptions and care management. The method has also been widely used ion inpatients, emergency department, outpatient, and across community settings.	Most patients using teach-back method greatly improved their disease knowledge and had better health acre knowledge retention.	It was difficult to measure the impact of teach-back method only since most studies used a combination of strategies in examining patients' self-acre abilities. Also, most of the studies used in this study were case-controls and cohort studies and only five were randomized controlled trials, hence the risk of biases.	Level III

Appendix B

CITI Certificate



CITI PROGRAM

Completion Date 13-Jan-2024
Expiration Date 13-Jan-2027
Record ID 60443271

This is to certify that:

Bichundo Lambert

Not valid for renewal of certification through CME.

Has completed the following CITI Program course:

Biomedical Research - Basic/Refresher
(Curriculum Group)
Biomedical & Health Science Researchers
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Liberty University

CITI
Collaborative Institutional Training Initiative

101 NE 3rd Avenue, Suite 320
Fort Lauderdale, FL 33301 US
www.citiprogram.org

Generated on 27-Feb-2024. Verify at www.citiprogram.org/verify/?wd4450248-22dd-4175-a016-51ecaacf45d4-60443271

Appendix C

Liberty University Institutional Review Board Approval

Fw: [External] IRB-FY23-24-1503 - Modification: Modification

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

April 8, 2024

Bichundo Lambert
Cynthia Goodrich

Re: Modification - IRB-FY23-24-1503 IMPROVING COPD PATIENT OUTCOMES: IMPLEMENTING AN EVIDENCE-BASED STANDARDIZED NURSING EDUCATION PROTOCOL

Dear Bichundo Lambert, Cynthia Goodrich,

The Liberty University Institutional Review Board (IRB) has rendered the decision below for IRB-FY23-24-1503 IMPROVING COPD PATIENT OUTCOMES: IMPLEMENTING AN EVIDENCE-BASED STANDARDIZED NURSING EDUCATION PROTOCOL.

Decision: No Human Subjects Research

Your request to conduct an integrative review instead of an evidence-based practice project will not alter the IRB's initial not-human-subjects-research determination, so IRB approval is not necessary.

Thank you for complying with the IRB's requirements for making changes to your approved study. Please do not hesitate to contact us with any questions.

We wish you well as you continue with your research.

Sincerely,

G. Michele Baker, PhD, CIP
Administrative Chair
Research Ethics Office

Reply Forward

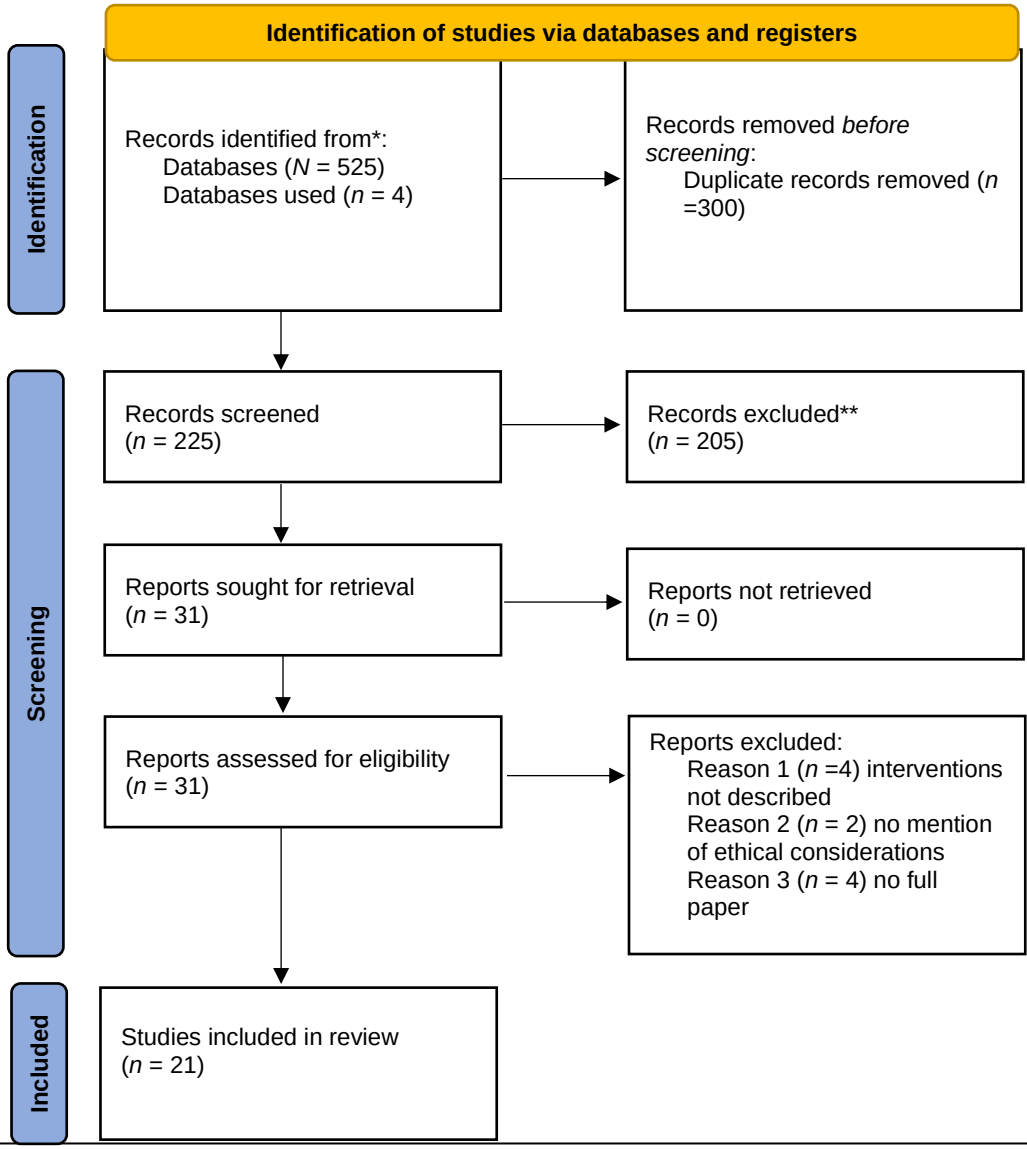
Appendix D

Timeline

- Project Proposal Planning Submission by February 12th
- Project Proposal Defense to chairperson by PowerPoint presentation by March 6th
- Initial Liberty University Instruction Review Board (IRB) granted approval by March 6th
- Project proposal revision submission to IRB by March 28th
- Liberty IRB process the exemption by April 8th
- Jerry Falwell Library (JFL) Literature Search in Database and PRISMA tool by April 15th
- Scholarly project development with editor request emailed by April 29th
- Project review and final edition by chairperson by May 16th
- Project emailed to the editor by July 10th
- Editor scheduled to review the project by July 15th
- Scholarly project oral defense by July 18th
- Project received from the editor by July 21st
- Final manuscript emailed to the chairperson by July 23rd
- Chairperson approval to submit to Scholar's Crossing by July 24th
- Project submission to Scholar's Crossing by July 24th

Appendix E

PRISMA Flow Chart



Note. Adapted from "The PRISMA 2020 Statement: An Updated Guideline for Reporting Systematic Reviews," by M. J. Page, J. E. McKenzie, P. M. Bossuyt, I. Boutron, T. C. Hoffmann, C. D. Mulrow, L. Shamseer, J. M. Tetzlaff, E. A. Akl, S. E. Brennan, R. Chou, J. Glanville, J. M. Grimshaw, A. Hróbjartsson, M. M. Lalu, T. Li, E. W. Loder, E. Mayo-Wilson, S. McDonald, . . . Moher, D. 2021, *BMJ*, *372*(71). https://doi.org/10.1136/bmj.n71

Appendix F

The Essential of Doctoral Education for Advance Nursing Practice

DNP Essential	Foundational Outcome Competency
I	**Scientific Underpinnings for Practice**. The DNP must utilize knowledge, science, and ethics to the application of care. This includes science-based theories for academic inquiry that leads to new EBP.
II	**Organizational and Systems Leadership for Quality Improvement and Systems Thinking**. The DNP is tasked with deciphering the evidence to determine if practice changes are required and how those changes will shape delivery methods. This essential necessitates visionary leadership for quality improvement and systems thinking.
III	**Clinical Scholarship and Analytical Methods for Evidence-Based Practice.** The DNP must employ analytical methods of evidence appraisal to search for EBP that improves quality, safety, and patient outcomes.
VI	**Interprofessional Collaboration for Improving Patient and Population Health Outcomes.** Interprofessional collaboration is a centerpiece of patient-centered care. The DNP is well positioned as a leader to operate in concert with other healthcare professionals to promote safe, cost-effective, and equitable care.
VIII	**Advanced Nursing Practice. The DNP must possess foundational competencies to ensure patient-centered care that is rooted in evidence**. The foundational aspect of advanced nursing practice is the ability to perform a thorough health history and physical exam. This enables to DNP to combine clinical expertise with EBP and patient preferences which leads to improved patient outcomes.

Note. Adopted from *"The doctor of nursing practice essentials: A new model for advanced practice nursing* (4th ed.)" by M. Zaccagnini & J. M. Pechacek, J.M. 2021, Jones & Bartlett Learning.