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Identifying Factors Contributing to Hospital Readmission of Patients With Chronic Obstructive Pulmonary Diseases

Marcia Hector
Walden University

Walden University

College of Health Professions

This is to certify that the doctoral dissertation by

Marcia Hector

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Review Committee
Dr. Michael Schwab, Committee Chairperson, Public Health Faculty
Dr. Jacqueline Fraser, Committee Member, Public Health Faculty
Dr. Kim Sanders, University Reviewer, Public Health Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2020

Abstract

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by

Marcia Hector, MBA, RRT-NPS

MBA, University of Phoenix, 2003

BA, University of the Virgin Islands, 1998

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Health Services – Community Health Promotion and Education

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Abstract

Chronic obstructive pulmonary disease (COPD) is one of the leading causes of hospital readmission within 30 days of discharge. However, the factors that contribute to early readmission of COPD patients are not well understood, nor is it clear how to reduce readmission. This study used a qualitative phenomenological approach to examine COPD patients' experience on factors that contribute to the COPD readmission rate and practices that might reduce it. In depth interviews with 10 COPD patients were conducted to explore their lived experiences of factors contributing to hospital readmission with COPD exacerbation. Questions were asked on issues known to affect readmission and the elements of behavior change used in the health belief model, which served as the study's theoretical framework. The results showed that the leading causes of early readmission relate to participants' difficulty making recommended behavior changes and their perception that more education and support are essential in managing and accepting COPD, including a better understanding of the disease's severity. All participants spoke of the need for improved communication with their providers and continuity of care in doctor visits, pulmonary rehab programs, and educational support, especially during the COPD hospital discharge process. This study's results can help develop management programs to reduce the rate of COPD patient readmissions within 30 days, which would reduce health care spending, improve the quality of life for COPD patients, and contribute to a positive social change.

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Dedication

I dedicate this dissertation to the ones who believed in me through the years of my life changes, happy moments, sad days, and joyous occasions. My two sons (Bruce and Dedarius), my parents (Mr. & Mrs. Jeffers), and most of all my heavenly sister (Diana Jeffers) who is always watching over me.

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Chapter 1: Introduction to the Study

Introduction

In the spring of 2010, the Centers for Disease Control and Prevention (CDC) (CDC, 2011) reported a lack of awareness in chronic obstructive pulmonary disease (COPD). They developed four goals as a strategy to increase awareness and assist in prevention and control. The four goals consisted of (a) surveillance and evaluation, (b) public health research and prevention strategies, (c) programs and policies, and (d) communication. These goals became a part of the COPD National Action Plan developed to prevent and control COPD and increase COPD awareness as a public health issue (CDC, 2019; 2011).

In 2017, the CDC released the COPD National Action Plan, and it is a living document that continues to evolve. The five goals were developed to (a) empower people with COPD, their families, and caregivers, (b) improve the prevention, diagnosis, treatment, and management of COPD, (c) collect, analyze, report, and disseminate COPD-related public health data, (d) increase and sustain research to better understand, and (e) translate national policy, educational, and program recommendations (CDC, 2019).

Hospitals are populated with people in an acute phase of COPD exacerbation, and physicians' offices, clinics, and skilled nursing facilities (SNF) are there to provide continuous care. However, gaps in transition of care, from the acute phase to continuous care, contributed to the U.S. national average 30 days readmission rate of 23% (Tiep, Carlin, Limber, & McCoy, 2015). As a result, the Centers for Medicare and Medicaid

Services (CMS) added COPD to its list of conditions for which financial penalties for readmission applied (CMS, 2016).

In 2015, hospitals with excessive readmissions of patients with COPD faced a loss of up to 3% of total Medicare reimbursement per year; this new policy coincided with the increased interest in estimating the risk of readmissions for COPD related hospitalizations (Simmering, Polgreen, Comellas, Cavanaugh, & Polgreen, 2016). In reducing the COPD readmission rate, it was necessary to identify the factors contributing to COPD patients' lived experiences with hospital readmissions within 30 days.

COPD refers to a group of diseases including emphysema, and chronic bronchitis, which causes airflow blockage and breathing problems (CDC, 2018). When an individual experienced a COPD exacerbation, treatment frequently required hospitalization. However, the factors contributing to the rate of hospital readmission for COPD patients were not well understood.

Many of the contributing factors found in the literature were smoking (Haghani et al., 2020; Thun et al., 2013), pneumonia (Hayden et al., 2015), age (Negewo, Gibson, & McDonald, 2015), physical inactivity (Wheaton, Cunningham, Ford, & Croft, 2015), occupational exposure (Paulin et al., 2015), and the lack of participation in pulmonary rehabilitation programs (Spruit, Pitta, McAuley, ZuWallack, & Nici, 2015). However, no in depth studies were published on how these factors combine with patients' lives contributed to 30 days readmission.

These contributed factors to COPD readmission population were explored via interviews with individuals who met the study requirements. The information obtained

from this study could lay the foundation for developing a management program to help reduce COPD hospital readmission rates. The new program would contribute to positive social change by improving the quality of life for COPD patients, reducing health care spending, and providing a structured program for individuals and healthcare professionals to utilize. This chapter includes a background, problem statement, purpose of the study, research questions, theoretical framework, nature of the study, definitions, assumptions, scope and delimitations, limitations, significance, and a summary.

Background

In 2015, the CMS determined that one in five COPD patients admitted to hospitals in the United States was readmitted within 30 days, at a cost of $17 billion annually (Kashef, 2017; Rinne et al., 2017). COPD is the third leading cause of death worldwide Tiep et al. (2015) and physicians have been tracking symptoms of COPD for 200 years. According to Petty (2006), the first descriptions of emphysema included Bonet's "voluminous lungs," Morgagni's term "turgid lungs," and Baillie's illustrations of the emphysematous lung, thought to be those of Samuel Johnson.

Presently, two identifiers for COPD are a history of smoking and pulmonary function tests (PFT), which is the ratio of the forced expiratory volume (FEV) divided by forced vital capacity (FVC), that is, the measurement of the amount of air exhaled in one second from the lungs, or FEV1/FVC. A PFT is required to diagnose COPD to prevent under recognized or under treated COPD, contributing to delayed diagnosis and increased exacerbation (Bade et al., 2019). Treatments for COPD include corticosteroids and bronchodilators, as well as referrals to pulmonary rehabilitation programs. The

prevalence and economic impact of COPD are escalating worldwide and becoming a health care burden in the United States (Buist et al., 2007; Carter, Tiep, & Tiep, 2008; Patel et al., 2017).

In 2013, approximately 12 million Americans were diagnosed with COPD, and at least another 12 million cases were presumed to be undiagnosed (American Lung Association, 2013). In 2017, the Behavioral Risk Factor Surveillance System survey found that approximately 22.5 million adults residing in the United States and about 16.3 million adults (6.6 %) reported ever being diagnosed with COPD (American Lung Association, 2020).

COPD will become the 3rd leading cause of death worldwide in 2020 and is currently the 3rd leading cause of hospital readmission in the United States (Granada et al., 2020). Many hospitals and primary care physicians were working diligently to help reduce the increase in diagnosed COPD. One of the factors that may help slow down the projected rise in COPD cases was education. It was important for COPD patients to have the necessary tools and resources to assist in their daily lives. Ray (2012) provided an excellent example of how inadequate education and support contributed to noncompliance with medication and treatment, increasing readmission. Patients could not fully comprehend their diagnosis and failed to manage their acute or chronic phases due to poor teaching and support. Moreover, a lack of communication between the patient and the doctor hindered the patient's chances of a better quality of life.

Liggett et al. (2020) provided an example of how the transition from hospital to home for patients moving through the emergency room, rehospitalization, and SNF

rehabilitation can create a gap in the quality of care, medical needs, medication errors, and a piece of lost information. The examples provided by (Ray, 2012; Liggett et al., 2020) showed how the communication process's inconsistency between the provider and patient could increase the chances of readmission.

A typical office visit should include reviewing current or past symptoms, updates on medications and refills, and questions and concerns from the patient and the primary caregiver. Partridge (2012) conducted a study with 1,022 asthma patients and 719 COPD patients and found that 83% saw the doctor on average, only once every 13.4 months for 12 minutes per visit. On the contrary, (Park et al., 2020) conducted a statistical analysis that showed how frequent outpatient visits for COPD (three or more times) per year reduced COPD risk exacerbation requiring admission by 45 - 60%.

Other factors to consider in COPD education were the availability of resources, such as medication financial assistance, educational pamphlets, and health management programs. The literature search found limited information on funding for pharmacy discounts or meal services, but more documentation on educational brochures and health management programs as tools for reducing costs and mortality and morbidity. There was ongoing research on health management programs to find the best practice for reducing mortality and increasing patients' knowledge of COPD. For example, (Agarwal, Gupta, & Fendrick, 2018; D'Souza, Regan, Burch, Rahnama, & Common, 2010) recognized a value-based (amount of payment) health care approach was as an essential role in preventive public health and patient education. Value based health care was a model that helped develop healthcare services by relating patient's outcomes to costs (Catalyst,

2017; Ebbevie, Forsberg, Essen, & Ernestam, 2016). This approach might contribute to reducing both pulmonary disease complications and rising costs.

Another example of a value-based health care model was done by (Fan et al., 2012). They conducted a randomized controlled trial comparing a comprehensive care management program with standard guideline-based care at 20 Veterans Affairs hospital based outpatient clinics. Unfortunately, after one year, the researchers stopped the study because of the death of 10 of the 209 patients randomly assigned to the intervention group and three of the 217 patients allocated to the usual care group. Although Fan et al. terminated the study, the intervention group showed a decrease in hospitalization compared to the control group at the time of termination.

In this study, the focus was on factors leading to readmission of individuals with COPD. The literature from the following researchers revealed studies on hospital readmission rates for pneumonia (Flanagan, Stamp, Gregas, & Shindul-Rothschild, 2016), congestive heart failure (CHF) (Pierre-Louis et al., 2016), and a few on COPD (Adamson, Burns, Camp, Sin, & van Eeden, 2016; Baker, Zou, & Su, 2013). These researchers focused on multiple contributing factors for readmission, including the acute exacerbation of COPD. Moreover, the following researchers conducted additional studies on comorbidity, primary care patient education, and other resource programs for early readmission.

For example, Lee, Andrade, Mastey, Sun, and Hicks (2014) showed more patients were readmitted in the winter months than at any other time of the year. Ray (2012) and Leggitt et al. (2020) linked the lack of education and resources related to early

readmission of COPD patients. Mantero et al., (2017) and Nantsupawat, Limsuwat, and Nugent (2012) identified comorbidities as factors that contribute to early readmission rates for COPD patients. Nantsupawat et al. (2012) conducted a study at the University Medical Center Lubbock, Texas, reported 81 COPD patients with 103 hospitalizations between October 2010 and March 2011. The study was a retrospective review of the medical records and measurement of 30 days readmission rates for patients with COPD. Nantsupawat et al. identified an early rehospitalization group and nonearly rehospitalization group and compared the differences between them using Pearson chi-square, Fischer's exact tests, and independent sample *t* test.

The results showed 13.6% of patients were readmitted within 30 days, with a mean age of 73 years, who stayed roughly 4.9 days (1–16 days) except for four (3.9%) patients who died. Most of the patients were discharged to home (63.6%), home health care (11.1%), or inpatient facility (25.3%). Unfortunately, 36 patients (32.3%) did not receive a long-acting bronchodilator or inhaled corticosteroids, but 67 (71%) received a follow up call within 14 days. There were no significant differences between the two COPD groups on readmission versus early readmission; however, patients with the comorbidities of ischemic heart disease and unilateral pulmonary infiltrate were at increased risk of readmission. As such, patients should be further evaluated on risk factors before discharge to determine the potential for early readmission. In the study, 14% believed that the first follow up calls post discharge of COPD exacerbation can reduce hospital readmissions (Nantsupawat et al., 2012).

However, what was not currently known in this study with a group of COPD patients were factor(s) that drives the readmission rates. This study focused on patients' lived experiences of early readmission and compared with the existing literature to better understand what contributed to hospital readmission. The results of this study will help formulate a COPD readmission program that addresses the patients' need to live a quality and healthier life. The literature on factors for readmission will be discussed in detail in Chapter 2.

Problem Statement

In 2012, COPD became the third leading cause of death in the United States (CDC, 2017) and the third leading cause of hospital readmission, with a 23% re-admittance rate within 30 days of discharge (Granada et al., 2020; Tiep et al., 2015). COPD is not curable, but it can be preventable and treatable in the short term. However, hospital readmission with a reoccurring diagnosis has become overly familiar; it was the primary problem addressed in this study. An initial review of the literature (Thun et al., 2013; Wheaton et al., 2015) revealed COPD's etiology. The precursors of frequent readmission like; (a) environmental exposure, (b) lack of exercise, and (c) medication noncompliance was identified, but little was known about the role of the non-physiological factors in readmission, like education or access to COPD management tools (Leggitt, 2020; Ray, 2012). The literature review provided known contributing factors for readmission, but what was unknown was the role of the contributing factors concerning the lived experiences of COPD patients with early 30 days readmission.

Purpose of the Study

The purpose of this qualitative, interpretative phenomenological study was to explore the lived experiences of the patients' factors that contributed to the readmission of COPD exacerbation. Information obtained from the literature about potential contributing factors to readmission and the health belief model (HBM) was used to develop the interview questions. This study aimed to better understand how these factors (education, pneumonia, smoking, occupational exposure, age, medication, and potentially other factors from the healthcare system) contributed to hospital readmissions. With the new law on 30 days readmissions, hospitals must identify potential or recurring patients who might fall into this category and understand the reasons for their readmission. The study ended with recommendations for the development of a COPD management program.

Research Questions

Main question: What are COPD patients' lived experiences of having COPD?

Sub questions:

1. What are COPD patients' lived experiences of the factors contributing to COPD hospital readmission?
2. What are COPD patients' lived experiences of the role of education in reducing readmission rates?
3. What are COPD patients' lived experiences of the role of physical activity in COPD readmission?
4. What are COPD patients' lived experiences of the role of the healthcare system in readmission?

Theoretical Framework

Increased interest in personal health and the broader availability of health information has led to establishing quality health promotion programs for most chronic diseases (McKenzie, Neiger, & Thackeray, 2008). The HBM was used as a theoretical framework to frame the interview questions to discuss the current factors researched with the patient's own hospital readmission experience. In the 1950s, the HBM was developed by a social psychologist Hochbaum Rosenstock (Rosenstock, 1974) to explain the failure of people's participation in programs to prevent diseases (Skinner, Tiro, & Champion, 2015). The HBM theory was used in this research because it allowed for an examination of the patients' perceptions of barriers that contributed to the hospital readmission.

The HBM was one of the most widely applied theories of health behavior that posits the six construct of predicted health behavior: susceptibility, severity, benefits to action, barriers to action, self-efficacy, and cues to action (Jones et al., 2015). The model originally started with the four constructs which focused on the individuals' opinions on their health and behavior about their disease. A fifth variable was added in 1988, self-efficacy, which referred to people's confidence in their ability to control, organize, and complete a course of action required to perform a specific task that led to an inevitable outcome (Ortlieb & Schatz, 2020; Rosenstock, Strecher, & Becker, 1988). The cue to action construct was added to the HBM to determine what helped prepare individuals to execute their plans. The HBM was intended to assess individuals' feelings on awareness and care of their disease, and this is discussed in detail in Chapter 2.

Nature of Study

An interpretative phenomenological approach was used in this qualitative study. Creswell and Creswell (2017) stated that a phenomenological approach is best suited to gain an in-depth understanding of the features of individuals' everyday experiences engaged in a common task. In this study I reviewed patient experiences and identified factors related to hospital readmission. The interview questions were formulated with the HBM and the researched literature. The questions were reviewed by a respiratory therapist employed at another facility for any possible biases. This structured approach was suitable to obtain information from patients via an in-depth interview on the factors contributing to hospital readmission. The data collected was recorded and transcribed for analysis in Chapter 4.

The interpretative phenomenological approach was used to describe the lived experience of 10 participants. Permission was granted to recruit from the following sites: a local physician's office, hospital, and a SNF. All entities provided medical services to the community. A flyer was posted in the physician office lobby area with information for the study and enrolling. The enrollment required a telephone conversation between the potential participant and the researcher. At that time, screening for the potential participant was done by asking if they meet the study requirements: (a) an official diagnosis of COPD from their physician, (b) age 18 and older, and (c) admitted to the hospital twice within 30 days or less. If the patient agreed to participate, an interview was scheduled to conduct the session. With the office space's approval from the office administrator and the patient's written consent, the patients' in-depth interview conversation will be conducted and recorded for data collection accuracy. I planned to recruit participants from the pulmonary office, but I conducted interviews at the SNF and the hospital due to the lack of participation. Chapter 3 describes a detailed description of the data collection, deviation, and analysis.

Definitions

Bronchodilators: A substance, especially a drug, that relaxes contraction of the smooth muscle of the bronchioles to improve ventilations to the lungs (Kacmarek, Stoller, & Heuer, 2019).

Emphysema: A destructive process of the lung parenchyma leading to permanent enlargement of the distal air spaces (Kacmarek et al., 2019).

FEV1: Forced expiratory volume. The maximum volume of gas exhaled during the first second of forced expiration (Kacmarek et al., 2019).

FVC: Forced vital capacity. The total amount of air exhaled forcefully and quickly (Kacmarek et al., 2019).

Frequent flyers: Patients who regularly repeatedly show up to the emergency room for medical care (Weiner, 2019).

Early hospital readmission: Any readmission less than or equal to 30 days after initial discharge (CMS, 2016).

The length of stay (LOS): The total time a patient remained in the hospital from admission to discharge (Chazard, Ficheur, Beuscart, & Preda, 2017).

Index COPD hospitalization: An admission with a main diagnosis of COPD not preceded by another hospitalization for COPD in one year (Alqahtan et al., 2020).

Assumptions

The study had one assumption that participants will be honest with answering the questions. In this study, the patients needed to be frank in describing their understanding of readmissions. Assuming the data collected was viable, the purpose of this study was to get a clearer understanding of how COPD patients can be assisted in preventing early 30 days readmission.

Scope

This study explored the lived experiences of participants in areas reported in the literature (education, pneumonia, smoking, occupational exposure, age, medication, and the healthcare system) that play a significant role in hospital readmissions and as a basis

for developing a potential management program that reduces COPD readmission. The population included in this study is limited to COPD patients of a local area of Loganville, GA.

Delimitation

A delimitation of this study was that all one-on-one interviews with the patients were the choice to get the raw data from patients who were experiencing of early readmission to hospitals instead of collecting several data on the frequent hospital readmissions. The phenomenological inquiry will not provide a quantitative result like other studies on COPD readmissions. Instead, it was designed to elicit information on possible readmission reasons, which could serve as variables for future quantitative research. What was not investigated was the number of people living in the individual counties' in Georgia with COPD.

Limitations

One of the limitations was not conducting studies throughout several surrounding counties' health facilities; as a result, my findings are limited to the participating patients, and cannot be generalized to participants from another community who might provide a different perspective on the research questions.

Significance

The information obtained in this study on factors contributing to readmission for COPD is needed to develop pulmonary management programs in hospitals, physician offices, and community health clinics. The implication for positive social change from this study is this pulmonary management program could decrease COPD 30 days

readmission rates. The new plan might ultimately reduce health care expenditures and increase reimbursement fees to the hospitals. This study can be replicated to investigate other healthcare facilities in Georgia and the United States.

Summary

COPD is the third leading cause of death in the United States (CDC, 2017). Hospital readmission with COPD exacerbation is increasing, and healthcare workers are working to reduce readmission rates. Without the COPD patients' voices, it is impossible to create a management program to assist the COPD population. COPD patients could share their lived experiences on factors contributing to early hospital readmission in a phenomenological approach. The results of this study would lay the foundation for formulating programs to help reduce readmission rates.

Chapter 1 introduced COPD and its comprehensive history and provided background information on existing factors contributing to hospital readmission of COPD patients. It also provided the theoretical framework used to structure this study to explore factors contributing to hospital readmission. Chapter 2 will include the literature on the prevalence of COPD, the factors that contribute to COPD patients' readmission, and different treatment variations.

Chapter 2: Literature Review

Introduction

In 2015, the CMS determined that one in five COPD patients admitted to hospitals in the United States was readmitted within 30 days, at a cost of $17 billion annually (Kashef, 2017; Rinne et al., 2017). In response to this situation, CMS issued new regulations decreasing reimbursement for patients readmitted less than 30 days after initial discharge (CMS, 2016). Recently, hospital administrators and the healthcare community have focused more attention on readmissions among COPD patients (Simmering et al., 2016). In this study, I collected data on the lived experiences of the participants to gain a better understanding of how smoking (Haghani et al., 2020; Thun et al., 2013), pneumonia (Hayden et al., 2015), age (Negewo et al., 2015), physical inactivity (Wheaton et al., 2015), occupational exposure (Paulin et al., 2015), and pulmonary rehabilitation programs (Spruit et al., 2015) play a role in hospital readmissions. The results of this study will be used as a resource for future development in COPD and other chronic disease management programs.

I reviewed the literature on the prevalence and determinants of COPD, its treatment and prevention, and readmission problems. I used a qualitative phenomenological approach to understand the contributing factors for readmission of COPD patients. The review topics were smoking, pneumonia, age, physical inactivity, occupational exposure, treatments, healthcare delivery systems, and education. Finally, I summarize and synthesize the researched information with the data obtained from the interview questions.

Research Strategy

For this literature review, I searched using the Walden University research databases: MEDLINE, HEALTH SCIENCE, CINAHL, SAGE RESEARCH METHODS, and ProQuest. Other research sites used included PubMed, Google scholar, organizations' websites, and social media. The literature review will encompass studies conducted from 1974 to 2020. Peer-reviewed articles were retrieved for the following keywords: *COPD, readmission rates, self-efficacy, smoking, pneumonia, self-management, education, medication, behavior, health promotion, co-morbidities, health education, asthma, bronchitis, emphysema, discharge planning, pulmonary rehabilitation, care management programs,* and *30 days rehospitalization.*

My research criteria included peer-reviewed articles, focusing primarily on the five years prior to me writing this dissertation. I looked through the databases mentioned above for literature with my keywords, gathered three to four papers, and selected the best two papers that supported my topic. In this literature search, I found many studies on the "what" factors of COPD readmission, but there was little information on "why" these factors were reoccurring, which sourced the gap in my study.

Theoretical Foundation

Health Belief Model

Theories of health behavior focus on the full constellation of human behavior that stems from rational, logical, and thought processes (Gehlert & Ward, 2019). One of the first models developed to explain health behavior was the HBM (Rosenstock, 1974). This model was initially designed to assist in researching the prevention and not the treatment

of the disease. In the 1950s, a group of social psychologists from the U.S. Public Health Service developed the HBM to understand the widespread failure to accept disease prevention or screen for early detection of tuberculosis. The first use was to determine the failure of screening tests for TB, cervical cancer, dental disease, and later rheumatic fever, polio, and influenza (Rosenstock, 1974). Since 1974, the HBM has been widely used to understand why individuals did or did not engage in various health-related actions (Hubley & Copeman, 2018; Janz & Becker, 1984). The HBM included patient responses to symptoms and compliance with prescribed medical regimens (Janz & Becker, 1984).

According to Sheeran and Abraham (1996), HBM focuses on the proper representation of health and health behavior through threat perception and behavioral evaluation. The risk perception was founded on two fundamental beliefs, perceived susceptibility to illness or health problems and likely severity of the illness (Horrell et al., 2020; Sheeran & Abraham, 1996). The behavioral evaluation consisted of two distinct sets of beliefs: those concerning the benefits or efficacy of a recommended health behavior, and those relating to the cost of or barrier to enacting the behavior (Sheeran & Abraham, 1996). Effing and Lenferink (2020) also stated the HBM model is used to understand how individual patient level factors influence health outcomes when they can perceive the risks associated with a given condition. The individual is more likely to seek health improving behavior in order to prevent the disease or reduce its progression.

The two variables to consider with the HBM are the value of the goal and the likelihood the individual will achieve the goal. When these variables are transferred to the health related behavior, it facilitates the evaluation of patients' willingness to avoid

illness or get well and believe in a health action plan to prevent or ameliorate the disease (Hubley & Copeman, 2018; Jan & Becker, 1984). The HBM prompted the participants to answer the questions based on their experiences and opinions. The HBM is broken down into six constructs:

1. Perceived susceptibility is the individual's beliefs about the severity of getting the disease.
2. Perceived severity is the seriousness of contracting an illness and treating it.
3. Perceived benefits are the perception of behavior change in reducing the disease threat.
4. Perceived barriers are the potential negatives that are not undertaking recommended behaviors.
5. Self-efficacy the conviction that one can execute a plan
6. Cue to action the exposure to events or media health publicity.

The HBM has not been widely used for COPD research but has been used to explore attitudes towards other chronic illnesses, such as Lyme disease and gestational diabetes. Ali, Vitulano, Lee, Weiss, and Colson (2014) and Ali and Katz (2015) conducted a qualitative phenomenological study with 12 adults to gather insights on patients' experiences living with Lyme disease. The constructs of the HBM were used to structure interview questions with patients; the questions were based on perceived susceptibility, seriousness, benefits, barriers, cues to action, and self-efficacy. The HBM

was also used in a study conducted by Tang et al. (2015), with 23 women with gestational diabetes (GDM), fivefold higher risk of developing type 2 diabetes.

One study of COPD that used the HBM was conducted by (Kale et al., 2015; Khdour, Hawwa, Kidney, Smyth, & McElnay, 2012) attempted to define COPD patients' motivation for adopting healthier behaviors with the use of medications. In this study with 173 patients on the potential risk factors of medication non-adherence with COPD, face-to-face interviews were structured around:

1. Perceived susceptibility - belief that not taking the medication can lead to relapse.
2. Severity – perceived seriousness of the disease.
3. Benefits – views that taking prescribed medication would decrease disease severity.
4. Barriers - denial of medication compliance or illness.

In this study, this theoretical model was used to elicit COPD patients' experience on: (a) why they were readmitted to the hospital, (b) how they are affected by frequent readmission, and (c) what they are doing to prevent reoccurring admissions. The theory constructs formulate the questions on patients' (a) perceived susceptibility (the extent to which they believe that lifestyle factors are associated with the continuous hospital readmission), (b) perceived severity (the stage and seriousness of COPD), (c) perceived benefits (the extent to which they believe that specific resources and education help to prevent frequent admissions), (d) perceived barriers (the role of family support, finances, medication compliance), (e) cues to action (the information provided on education and

reminders), and (f) self-efficacy (their ability to follow-through on continuum care). The constructs of the HBM was used to develop questions which prompted the participant to express their opinion about their current diagnosis, acceptance of their diagnosis, any known barriers, and possible plan to overcome them.

Morris, Marzano, Dandy, and O'Brien (2012) shared other theories that focused on individual behavior and experiences. The theory of planned behavior was used to explain and predict likely responses that may help identify behavior changes. The focus of the stages of change model was on how individuals in the same setting should face similar problems and barriers and thus can be helped by the same intervention. Sussman and Gifford (2019) shared the theory of planned behavior proposes behavioral intentions are predicted by (a) attitudes toward the behavior, (b) subjective norms regarding the behavior, and (c) perceived control over the behavior.

In this study, I looked for the patients' lived experiences of the factors that influence hospital readmission behavior for COPD instead of the actual action of readmission. The selection of the HBM was most appropriate for this study because the theory can be used as a tool to capture patients' lived experiences on hospital readmission and the education needed to manage the disease. In the next section, the literature review focused on the contributing factors of readmissions.

Literature Review

Prevalence of COPD

COPD refers to a group of diseases, including emphysema, and chronic bronchitis, which causes airflow blockage and breathing problems (CDC, 2018). Signs and symptoms of COPD are the inability to breathe effectively during an acute exacerbation, chronic cough, smoker's cough, wheezing, coughing up excessive mucus, and increased shortness of breath during activities (Negewo et al., 2015; NIH, 2020). There are currently two identifiers for COPD, PFT testing, which is the ratio of the forced expiratory volume divided by forced vital capacity (FEV1 / FVC) (the measurement of the amount of air exhaled in one second from the lungs), and a history of smoking. A PFT is required to diagnose COPD to prevent under recognized or under treated COPD, contributing to delayed diagnosis and increased exacerbation (Bade et al., 2019).

Halldin, Doney, and Hnizdo (2015) obtained data from the National Health and Nutrition Examination Survey showing that an estimated prevalence of COPD among United States adults aged 25 years and older was 15.1% based upon lung function testing by spirometry and 5.2% based on doctor diagnosis of COPD (either chronic bronchitis, emphysema, or both). In 2011, the CDC surveyed Georgia adult residents and reported a health care professional told 6.9% of participants that they had COPD (CDC, 2012; 2018). Of the people surveyed, 5.6% of males and 8.2% of females had COPD, with the highest concentration of COPD patients in 2011 being aged 65–74 years. After the year 2014, the state of Georgia had a prevalence rate of COPD among adults 18 years and

older of 7.4% (males 5.1% and females 9.6%), and the highest prevalence rate was found to be in people aged 20–24 years 8.9% (CDC, 2012; 2018).

Comorbidity

The mechanistic links between COPD and its comorbidities are still not fully understood, but a potential list of determinates (aging, smoking, and physical inactivity) has been suggested (Negewo et al., 2015). Since COPD primarily affects the lungs, it is recognized as a complex multi component disease characterized by chronic systemic inflammation that frequently coexists with other conditions known as comorbidities (Negewo et al., 2015). Comorbidities may be common in any stage of the disease, and they could affect the outcome and management strategies of COPD. Many patients admitted to the hospital have a history and diagnosis section in their chart that contains these comorbidities. For example, if a patient is admitted with COPD exacerbation and has a history of CHF, diabetes, or anemia, these diagnoses would be considered the patient's comorbidities. On the other hand, CHF patients readmitted within 30 days often have COPD listed as comorbidity on their charts. Other possible health risks to COPD are smoking, physical inactivity, oxidative stress, and systemic inflammation.

The most commonly found comorbidities accompanying COPD were characterized by low grade systemic inflammation, which was cardiovascular disease, metabolic disorders, osteoporosis, skeletal muscle dysfunction, anxiety or depression, cognitive impairment, gastrointestinal disease, and respiratory conditions such as asthma, bronchiectasis, pulmonary fibrosis, and lung cancer (Negewo et al., 2015). All comorbidities play a different role in the effect of COPD. COPD is a restriction of the

airflow to the lungs, which could severely affect a patient with skeletal muscle dysfunction or pulmonary fibrosis. Furthermore, a patient who experiences high anxiety level can be profoundly affected by the inability to breathe during an exacerbation.

Although both asthma and COPD can be individually identified, it is sometimes challenging to determine the difference, and therefore the prevalence fluctuates, especially in older patients. De Marco et al. (2013) and Woodruff et al. (2017) stated that these two diseases might coexist in more than 40% of patients who have COPD and a history of asthma, and they identified asthma as a risk factor for developing COPD. However, the diagnosis for patients with both COPD and asthma is the overlap syndrome. These patients are susceptible to rapid disease progression, decreased quality of life, increased comorbidities, and health care utilization with frequent episodes of respiratory exacerbations.

De Marco et al. (2013) based the prevalence of these diseases on physician diagnosed COPD, as reported by the participants and asthma COPD overlap syndrome in representative samples of young, middle aged, and elderly adults. The result showed that the younger population (aged 20–44 years) had a higher percentage of medical diagnosis of asthma, than the age group of 65–84 years, where a prevalence of COPD is greater. As people age, the prevalence of asthma decreased, and the prevalence of COPD increases; however, the prevalence of asthma/COPD overlap syndrome remains significant even at the extremes of the age range. The study's limitation was the primary patient diagnosis from a physician, not from an actual lung function test. Asthma and COPD prevalence

show significance in age range, but asthma/COPD overlap syndrome does not. Further testing is needed to identify the phenotype associated with more respiratory symptoms.

Baker et al. (2013) conducted a retrospective cohort study of 18,568 U.S. patients with an index of COPD hospitalization. The criteria were age group of 40–65 years with a primary diagnosis of COPD between July 1, 2008, and June 30, 2010 (continuously enrolled 12 months before and after), and were alive at hospital discharge. Approximately one-third of the sample, 6,095 (32.83%), met the criteria. Of these patients, 503 (8.25%) were readmitted within the first 30 days post index hospitalization and 2,527 (41.46%) within the first year. The results showed that comorbid conditions and health care services usage were significant predictors of early readmission (Alqahtani et al., 2020; Baker et al., 2013). If patients were not readmitted for COPD, they were readmitted for their comorbidities such as CHF, diabetes, liver disease, and myocardial infarction.

Factors Identified With COPD

The literature research identified the following factors in association with COPD. This section provided information supporting how the following factors: smoking, nutrition, pneumonia, age, physical inactivity, and occupational exposure were associated with individuals who were readmitted for COPD exacerbation.

Smoking

Thun et al. (2013) provided a perspective on the evolution of smoking related risks of male and female smokers in the United States over a 50 year period, from 1959–1965, 1982–1988, to 2000–2010. The study derived five significant findings. First, there was no difference in male and female smokers' death rates from lung cancer, COPD,

ischemic heart disease, and stroke. Second, the mortality rate of men in the age group of 55–74 years and women in the age group of 60–74 years for all the diseases mentioned above, which included COPD, were three times higher among current smokers versus those who never smoked.

Thun et al. (2013) also found that the rate of death for COPD continued to increase among both male and female smokers despite their age, but showed that quitting smoking at any age lowered the mortality from all significant smoking related disease. Finally, the researchers found that individuals with a high school education had a higher risk or similar to those with a college education. In addition, Haghani et al. (2020) stated the onset age of cancer and heart diseases in smokers did not differ by sex, even for individuals who were heavy smokers.

The smoking rate among adults with a GED 44.1% was more than five times the rate for those with a college degree 8.3% and almost twice the rate of adults whose highest level of education was a high school diploma 23.6% (Schoenborn, Stommel, & Lucas, 2017). Cigarette smoking is not limited to age, education, gender, or race, nor is the death of individuals from COPD.

Contrary to (Haghani et al., 2020; Thun et al., 2013), McAfee and Burnette (2014) and Gut-Gobert et al. (2019) stated the impact of smoking on women's health has increased over men. From the 20th century, tobacco companies market cigarettes to women, which grew smoking related diseases like lung cancer, COPD, and cardiovascular disease. Following the release of the Surgeon General's report in 1964, cigarette smoking was associated with lung cancer and resulted in a decline in male

smokers as opposed to women smokers (Gut-Gobert et al., 2019; McAfee & Burnette, 2014). However, between male and female smokers, women were more at risk of developing smoking related heart disease or dying from COPD.

Postma, Bush, and van den Berges (2015) described COPD as mainly a smoking disorder that affects people worldwide. It becomes apparent around the age of 40–50 years, but can begin very early in life. This disease is no longer a disease of old age, race, or gender. McEvoy and Spindel (2017) stated in utero smoke exposure has significant effects on the fetus's developing lungs with long lasting or permanent structural changes, altered pulmonary function, and increased respiratory illness. This form of smoking is the first exposure to individuals who might develop a diagnosis of COPD in their adult life (McEvoy & Spindel, 2017).

Another form of smoking was second hand smoke. Exposure to secondhand tobacco smoke is one of the prime risk factors for chronic lung disease like COPD development (Patel, Trumph, Bodas, & Vij, 2017). This exposure can come from family members, riding in the car with parents who smoke, or even associating with friends who smoke. Smoking is very prevalent in public and sometimes can be harmful to the innocent bystander.

Melzer et al. (2016) conducted a cross sectional study on the association between respiratory symptoms and other COPD severity markers intending to quit smoking among a cohort of patients with probable COPD. A total of 1,206 participants were asked the question, "Are you ready to quit smoking in the next 30 days?" Only 338 were current smokers, and 99 indicated their intent to stop smoking within 30 days. Melzer et

al. realized the participants' associated respiratory symptoms like phlegm, coughing, and wheezing with a need to quit smoking as opposed to the severity of their COPD. The burden of the participants' symptoms of patients with early-stage COPD were associated with the urgency to stop smoking. The patients with severe COPD had no desire to quit smoking within 30 days. The goal of smoking cessation is to help individuals quit tobacco use and improve their quality of life. Healthcare workers often educate patients on how cigarette smoking can cause a wide range of diseases and long-term health problems like chronic obstructive pulmonary disease (Waters et al., 2016).

In examining factors that contributed to COPD, cigarette smoking was one of the issues. Cigarettes are sold in grocery stores, pharmacies, package stores, and gas stations. CVS pharmacy analyzed the cost and factors associated with tobacco. The Health Affairs blog included an article reporting more than 480,000 deaths each year were caused by cigarette smoking in the U.S., and the cost of tobacco estimated at $289 billion and over $133 billion for medical care of adults (CVS, 2014). For example, CVS pharmacy can make a difference in these numbers is to eliminate cigarette sales to promote healthy living. This analysis was preliminary, and further testing and research were needed to study the effects of policies to end tobacco sales in pharmacies (CVS, 2014).

Nutrition and Smoking. Part of staying healthy is eating healthy, especially the consumption of fruits and vegetables. Fratantoro (2017) analyzed the respiratory health of 44,000 men, age 45-79 years for 13 years. The purpose of the analysis was to determine if fruits and vegetables could help reduce the risk of developing COPD among smokers and nonsmokers. The researchers used a questionnaire detailing how often the

participants consumed any of the listed 96 foods daily. The results showed that 63% of the men smoked at some point in their lives, 24% were current smokers, and 38.5% never smoked. The current or former smokers who ate five or more servings of fruit and vegetables daily were respectively 40% and 34% less likely to develop COPD than non-smokers who ate the same portions and were 13.5 times more likely to develop COPD (Fratantoro, 2017).

As oxidative tissue stress and inflammation may be involved in COPD development, smoking can be a potent trigger of this process (Fratantoro, 2017). Cigarette smoking can impair lung functions over a period. The antioxidants from eating five or more fruits per day help decrease oxidative stress and inflammation levels. Kaluza, Larsson, Orsini, Linden, and Wolk (2017) also conducted a study that founded a significant association between fruits and vegetable consumption reducing the levels of oxidative stress and inflammation in the lungs and increasing the levels of the antioxidant defense among smokers versus nonsmokers. The pathogenic mechanisms leading to COPD may be different in smokers/ex-smokers and never-smokers. For non-smokers, this may relate more to genetic predisposition and environmental exposures (Kaluza et al., 2017).

Pneumonia

Children under the age of 16 years old often have seasonal colds and pneumonia. Hayden et al. (2015) focused on the possibility of childhood pneumonia, increasing the risk of COPD in adults. Hayden et al. investigation found an association between childhood pneumonia and decreased adult lung function. Hayden et al. further examined

the association between pneumonia in children and subsequent respiratory illness in smokers, hypothesizing that childhood pneumonia is a risk factor for reduced lung function and COPD in adult smokers. The study included 10,192 current and former smokers, with or without COPD, aged 45–80 years, non-Hispanic White or African American, and having at least a 10 pack per year smoking history.

The results of the study (36 were excluded) showed that of the 854 who reported having childhood pneumonia (< 16 years old), 405 had COPD and 282 had normal spirometry. Of the 9,302 participants without childhood pneumonia, 3,267 had COPD, and 4,097 had a normal spirometry. This study revealed that adult smokers with a history of childhood pneumonia were associated with COPD and reduced lung function. The most significant association was the subset of subjects who had pneumonia and asthma in childhood.

Another form of pneumonia was community acquired pneumonia (CAP). This type of pneumonia was the most common reason for physician visits of 4.5 million people per year and hospitalization of 1.1 million admissions annually in North America (Dang, Majumdar, Marrie, & Eurich, 2015). An individual can acquire this infection from other people in the community outside of a hospital setting. With the increase of morbidity and mortality, CAP was significant, especially with 65 years or older patients. COPD, in particular, was widely researched and established as an important risk factor for incident pneumonia (first episode) and also a link to recurrent pneumonia (Dang et al., 2015), and is the most common underlying disease in patients with CAP who required hospitalization (Yamauchi et al., 2015). Some other factors that increased the chances of

recurrent pneumonia are: (a) advanced age, (b) impaired function status, (c) lower activity level, and (d) dysphasia.

According to Yamauchi et al. (2015), COPD patients have been reported to have an increased risk of dysphagia, which was related to the occurrence of aspiration pneumonia. Dysphagia was noted in COPD patients by reduced laryngopharyngeal sensitivity and impaired swallowing function, which caused recurrent pneumonia and hospitalization. Aspiration pneumonia can happen to anyone, at home or in the hospital, but patients hospitalized with COPD had an increased risk of reoccurring aspiration during their stay. The severity of a COPD patient's lung function varies among patients, and age could affect the recovery effort from pneumonia.

Age

As people age, the body becomes susceptible to developing multiple conditions and low grade systemic inflammation, which relates to diseases like COPD (Negewo et al., 2015). As the body ages, there are three physiological changes individuals experience: (a) change in body temperature, (b) a decrease in organ mass, and (c) decline and loss of the functional reserve of the body (MacNee, Rabinovich & Choudhury, 2014; MacNee, 2016). Aging can be associated with the progressive degeneration of tissues, which causes an adverse impact on the structure and function of human organs, a known risk factor for chronic diseases (MacNee et al., 2014; 2016). One of the chronic diseases was COPD which was associated with the accelerated aging of the lungs. Some of the side effects of the body's aging were like the symptoms of COPD: (a) shortness of breath, (b) decreased physical activity, and (c) excessive mucus.

Between the years 2000 and 2050, the proportion of the world's population over the age of 60 years will double from around 11% to 22% (MacNee et al., 2014; MacNee, 2016) which increases the chances of chronic age-related diseases. Age related changes and disease related chronic conditions like COPD can significantly impact the lives of older adults and the ability to ambulate, vision imparity, and decrease in self-motivation, (Algilani, Ostlund-Lagerstrom, Schoultz, Brummer & Kihlgren, 2016; Cline, 2014). With these factors, it was important for healthcare providers to deliver adequate medical support to elderly patients living with COPD.

Physical Inactivity

According to Wheaton, Cunningham, Ford, and Croft (2015), adults in the United States with COPD were more likely than those without COPD to: (a) report being unable to work (24.3% vs. 5.3%), (b) have activity limitation because of health problems (49.6% vs. 16.9%), (c) have difficulty walking or climbing stairs (38.4% vs. 11.3%), or (d) use specialized equipment to manage health problems (22.1% vs. 6.7%). The four areas mentioned above were critical in the daily living of an individual's life. They found that if people were unable to work, they might not qualify for health insurance to cover the specialized equipment to assist in their health problems. Adults with physical limitations from COPD were more likely to be unemployed or limited in the type of work compared to individuals living without the disease. The boundaries of this study included self-reporting of COPD, the cross-sectional study on whether the COPD or activity limitations came first and the response rate ranged from 29% to 60.3% in some states; therefore, nonresponsive bias might have affected the results.

COPD affects the lungs with decreased lung functions that hinders individual's ability to breathe effectively or partake in physical activities. COPD patients are often recipients of supplemental oxygen which helps with shortness of breath. Some patients are often unable to work due to lack of energy that requires supplemental oxygen; they may be placed on work disability. Wheaton et al. (2015) noted that COPD is the sixth largest contributor to the number of years lived with disability in the U.S. and the likelihood of collecting Social Security Disability Insurance and Supplemental Income.

Spruit et al. (2015) noted that physical inactivity was prevalent in patients with COPD compared with age matched healthy individuals or patients with other chronic diseases. Not only was physical inactivity an advanced feature of COPD, it was also easily identified in patients with low lung function volume preceding the onset of breathlessness. Shortness of breath was one of the main symptoms of COPD patients' experienced during any physical exertion or exacerbation. COPD patients performing regular exercise reported reduction in breathlessness and physically active patients show better functional status and less systemic inflammation with improved exercise capacity (Miravitlles, Cantoni, & Naberan, 2014).

According to (Matkovic et al., 2020; Miravitlles et al., 2014) physical activity was significantly reduced in COPD patients compared with healthy individuals of the same age group. Not only was the physical activity of COPD patients different from healthy people, but it also differed from patient to patient. Tailoring the support and needs to individualized patients' medical condition was recommended to promote physical activity.

Occupational Exposure to Toxic Fumes, Dust, and Hazardous Materials

Bepko and Mansalis (2016) conducted an analysis of data from the National Health and Nutrition Examination survey and concluded that approximately 19% of all COPD cases were attributed to multiple occupational exposures. Even though occupational COPD was commonly caused by agents of vapors, gases, dust, and fumes, concurrent exposure to cigarette smoke with workers created a higher risk of developing occupational COPD than non-smokers exposure to agents only.

Although occupational exposure has been implicated in COPD causation in populations with concurrent smoking, systematic reviews estimated 15% of COPD occurrences were attributed to workplace exposures Paulin et al. (2015). Paulin et al. conducted a multicenter cohort study on a group of males and females, age 40 to 80 years old, current or former smokers, smoking measurements of FEV/FVC pre and post bronchodilators, and with or without COPD, to determine the impact of occupational exposures on COPD morbidity.

Participants of the study job classification were factory workers, machine operations, truck driving, construction or general contracting, food industry, and where exposed to vapors, gas, dust, or fumes. The type of job played a significant role in developing COPD even for non-smokers, from the exposure to fumes and vapors over a length of time. The results showed that COPD patients' average age was 65 years, and 38% of COPD patients were current smokers with a 45 pack per year history and heavy smoking exposure (Paulin et al., 2015). The cross sectional analysis revealed the

association between occupational exposure, increased odds of COPD, and a worse morbidity rate.

Because tobacco smoking was a primary risk factor for COPD, (DeJong et al., 2013; Pourhassan, Meysamie, Alizadeh, Habibian, & Beigzadeh, 2019) conducted a study on occupational factors that drive the development of COPD. A cohort study was done to assess the occupation exposure to vapors, gasses, dust, and fumes (VGDF), pesticides, and solvent solutions among smokers and non-smokers to see the effects on the level of lung functions and the severity of airway obstructions. The information obtained from the study revealed individuals exposed to VGDF had a lower level of lung function and a higher prevalence of airway obstruction. The participants with a smoking history had a significant loss in lung function and airway obstruction as opposed to non-smokers; however, they were the same for solvent exposure. Limitations to this study were not knowing the type of jobs the subjects worked at, and their age relation to their capability to perform lung spirometry testing.

Using personal protective equipment can help protect individuals from hazardous chemicals. A cross sectional study was conducted with workers in a factory processing hemp and jute for approximately 16 months. Hemp and jute were natural fibers used in manufacturing companies that identified rates of byssinosis (brown lung disease) and COPD in workers who worked with both (Er et al., 2016). The purpose of the study was to understand the effect of hemp and jute dust together and separately for the workers as well as the appearance of byssinosis frequency and COPD when these dusts were inhaled over an extended period. The study included 266 people, which consisted of 164 active

employees and 102 retired employees who completed a questionnaire and a few preliminary tests as part of the qualifications to participate.

The results showed the active employees were exposed to jute alone and hemp plus jute in contrast to retired workers who were mostly exposed to hemp alone with fewer exposed to hemp plus jute (Er et al., 2016). Also, byssinosis was 28% higher among workers who were exposed to both jute and hemp dust as opposed to being exposed to jute or hemp alone. This study identified the use of personal protection and environmental hygiene as a source of prevention of byssinosis (Er et al., 2016). The above factors identified with COPD also played a role in readmission.

Factors Contributing to Readmission

Health Care Delivery System

With the growing concern of current health care models in the United States not meeting the needs or requirements of the population, the Agency for Healthcare Quality and Research conducted a review of studies performed to date on the implementation of Patient Centered Medical Home (PCMH). The PCMH was a model of primary care transformation used to meet patients' medical needs and improve patient and staff experiences, outcomes, safety, and system efficiency (Jackson et al., 2013; Jolles, Lengnick-Hall, & Mittman, 2019).

The core principles of the PCMH included: (a) wide-ranging, team-based care, (b) patient-centered orientation toward the whole person, (c) care coordinated across the health care system and patient's community (d) enhanced access to care that uses alternative methods of communication, and (e) systems-based approach to quality and

safety (Jackson et al., 2013, p.169). From these core principles, an operational definition of PCMH was created to include team-based care, having at least two of the four elements on improving the entire organization, sustained partnership, and intervention involving structural changes to traditional practice.

The purpose of the study by Jackson et al. (2013) was to describe approaches for PCMH implementation and summarize evidence for effects on patient and staff experiences, the process of care, and clinical and economic outcomes. They reviewed primary care-based evaluations of comprehensive PCMH intervention, using the following three research questions:

1. Were all individual PCMH components implemented?
2. What financial models and implementation strategies were used to support uptake?
3. What are the effects of the PCMH on patient and staff experiences, the process of care, clinical and economic outcomes?

Jackson et al. (2013) included 24 of 31 studies describing the usage of all seven major intervention components but varied considerably in the numbers and types of specific approaches in implementing core components. The seven principal components were, (a) quality, (b) coordinated care, (c) team, (d) sustained partnership, (e) comprehensive, (f) enhanced access, and (g) structural changes. They also found that only 13 of the 31 studies included their financial model, which was insufficient to determine effects on clinical and economic outcomes. Jackson et al. concluded that

PCMH had a small positive effect on patients' experiences and preventive care—staff experience improved slightly, but no changes were noted on staff retention.

Lee, Andrade, Mastey, Sun, and Hicks (2014) conducted a study with two years of data at a 257-bed community hospital in Massachusetts. The study was done with patients diagnosed with CHF, pneumonia (PNA), and COPD. The purpose of the study was to assess the association of institution factors with 30 day readmission. Lee et al. (2014) found that risk factors for readmissions might be comparable to previous studies, and the factors related to hospital services might be different and could affect the readmission rate. The data were collected from questionnaires emailed to a hospitalist who supervised the house staff and non-house staff providing care to patients discharged with the primary diagnosis and readmitted within 30 days.

In the two year period of the study, there were 4,012 total patients discharged, of which 3,774 (94%) were discharged by the hospitalist. Among the 3,774 patients, 2,284 (60.5%) had CHF, 1,083 (28.7%) had PNA, and 1,358 (36.0%) had COPD. The average LOS was 4.1 days. Additionally, 15.5% had been readmitted in the previous calendar year, and 61.5% were discharged home, and 637 (17%) became 30 day readmissions (Lee et al., 2014), with the number of readmissions in the winter, 199 (20.6%), being higher compared to other seasons, and the cardiac floor had the least readmission rate. The study concluded that factors related to the structure of the hospital (level) and the season might contribute to the readmission risk beyond patient related factors found in existing literature (Butala, Secemsky, Wasfy, Kennedy, & Yeh, 2018; Lee et al., 2014).

Hospital Success on Readmission

The readmission of patients can be costly to the healthcare system. About one in five Medicare fee for service beneficiaries, totaling over 2.3 million patients, are re hospitalized within 30 days after discharge, incurring an annual cost of $17 billion, which constitutes nearly 20% of Medicare's total payment (Shams, Ajorlou & Yang, 2015). Hospital leaders are trying to decrease 30 day readmissions in their hospitals, and are looking for innovative ways to follow through. Mitchell et al. (2016) conducted a study on the reengineered discharge (RED) program, which was implemented in 10 hospitals throughout the United States. The study was designed to recruit and evaluate ten hospitals in the U.S. for approximately one year. The method used in this study was a qualitative design to assess the experience of the ten hospitals with the RED program. The RED program was a nationally recognized best practice centered on delivering a patient tailored hospital discharge plan demonstrated to reduce all cause 30 day readmissions and improve safety during care transitions (Mitchell et al., 2016).

After completing the three step process of developing and implementing the toolkits, selecting 10 hospitals, and evaluating the process, the results showed eight of 10 hospitals showed some improvement with their 30 day readmission rates. Overall, the hospitals who implemented the RED program as planned had several key factors in common: (a) commitment from senior leadership, (b) supportive implementation team, (c) assess results and took accountability, and (d) collaborative support from staff and IT department. Some hospitals experienced variations during their implementation process due to unavailable resources; however, they were still able to complete the program

within one year. Despite some limitations of bias response during interviews, hospitals in lower socioeconomic settings, the implication on were implementing a streamlined discharge process to achieve improvements in 30 day readmissions was a complicated process that required a significant commitment on behalf of the hospital leadership and implementation team (Mitchell et al., 2016).

Another working area to help improve the 30 days readmission rates of COPD patients was the hospital respiratory department. Hammel et al. (2016) conducted a study on the collaboration of the respiratory department, hospital medical group, and the practice leadership team at a small hospital using the define, measure, analyze, improve, control (DMAIC) framework. In this study, they identified the COPD population, the type of care provided, and the potential causes of readmission rate of 16% within the last 18 months. Hammel et al. identified the gaps in the quality of care which caused COPD readmission. After identifying the gaps in the quality of care, the next step was to utilize the Chronic Pulmonary Disease Clinical Specialist-RT plan as the intervention to decrease the rate from 16% to 11% within 12 months. The Chronic Pulmonary Disease Clinical Specialist-RT plan identified the gaps with continuity of care within the transition phase of the hospital to home process of providing daily coaching on: (a) equipment, (b) medications, (c) therapy, (d) following up with physicians, (e) DME providers, and (f) making phone calls to patients within 24-48 hours. In conclusion, a pilot study to assess the outcomes was completed and the process will continue collaborating with all departments of the hospital to continue to decrease the readmission rates of COPD patients.

Hospital Failure on Readmission

The literature research revealed several studies on which a before and after intervention was used and possible factors that contributed to decreasing 30 day readmission rates. Roberts et al. (2016) conducted a retrospective analysis to identify predictors of COPD readmission. The study revealed the inadequacy of the hospital system to determine pre index variables like pneumonia, drug therapy, prior hospitalization, and comorbidities. Without the use of the available readmission programs or software, many hospitals can miss these important factors, which significantly contribute to early readmission. On the other hand, post index variables like the use of steroids and nebulizers were factors that delayed 30 day readmission among the COPD patients. For example, if a patient was admitted for an initial index admission of COPD and the healthcare staff has no previous history on existing comorbidities, or the previous hospitalization for pneumonia, this patient may be over looked as a chronic patient being treated for an acute episode. The goal of implementing new readmission programs was to provide the necessary treatment and support to prevent recurring hospital visit for any patient.

Sharif, Parekh, Pierson, Kuo, and Sharma (2014) conducted a retrospective cohort study on the predictors of early readmission among commercially insured patients aged 40-64 years, hospitalized with COPD. The information was retrieved from a large private health insurance plan database with targeted ICD-9 codes and a primary diagnosis of COPD. Among the 8,263 qualified patients, the factors associated with early readmission

were: (a) patients' comorbidities, (b) the process of care, and (c) the C-statistic model which identifies the risk score of the events leading to one outcome.

An analysis of the data revealed patients with multiple comorbidities, or a combination of comorbidities were more prone to increased readmission rates (6.1% to 14.9%) within 30 days. The other area of concern was the process of care which revealed patients who did not receive any drug prescriptions (e.g., short or long-acting B agonist, inhaled glucocorticoids) within 30 days of discharge had higher rates of readmission (Sharif et al., 2014). Also, patients who had follow up appointments within 30 days of discharge had a readmission rate of 7.6% compared to 10.9% who did not have follow up visits post discharge (Sharif et al., 2014). The C-statistic model improved from 67.7% to 71.7% which consisted of an evaluation of the patient with system factors of outpatient visits, PCP, specialist, medication, LOS before hospitalization and comorbidities. In summary, patient, provider, and system factors predict COPD readmission, and it should be modifiable to decrease the rate of readmission within 30 days (Sharif et al., 2014).

Zhou, Della, Roberts, Goh, and Dhaliwal (2016) also conducted a systematic review of studies of 28 and 30 days unplanned hospital readmission. The initial database search produced 7310, and after the process of elimination, 60 studies were viable for the analysis. Among the 60 studies, the variables associated with predictive readmission models were: (a) the C-statistic model, (b) length of stay, (c) previous admissions, (d) laboratory tests, and (e) medication.

Education in Relation to Readmission

Community resources. Ray (2012) argued that COPD disease management programs should include a respiratory therapist who has advanced cardiopulmonary training that allows for individualization of patient training based on health literacy. She further stated that licensed respiratory therapists should work with COPD patients. However, hospitals often employ registered nurses and social workers as case managers to provide a holistic approach to treating the patients rather than the disease process. Silver et al. (2017) also stated the role of the respiratory therapist education program could contribute to 30-day readmission reduction.

Ray (2012) focused on developing a safe and appropriate discharge plan that transitions the patient from acute to post-acute care. Ray used a qualitative approach to address the following factors: (a) living situation, (b) caregiver support, (c) financial issues, (d) spiritual and cultural beliefs, (e) advance care directive or palliative care, (f) nutrition, (g) risk factors, (h) health literacy, (i) cognitive limitation, (j) mental health, (k) substance abuse, and (l) post-acute care services. Having all the pertinent information for patients, the respiratory case manager addressed all the factors in the case management program, which provides assistance and resources to the patients. This study reflected that inadequate education and support were crucial factors that prohibited the care for patients.

Kasikci (2011) explored patient education in improving the self-efficacy of patients with COPD. This case study report was a combined qualitative and quantitative approach to investigate the utility of structured training programs on strengthening older

adults' self-efficacy with chronic obstructive pulmonary diseases. There were two types of expectations that influenced behaviors: (a) outcome expectations, which refer to the conviction that particular behavior will lead to an inevitable outcome, and (b) self-efficacy expectations, which is an individual's judgment of his or her confidence in carrying out a particular action (Kasikci, 2011). In addition, Selzler et al. (2020) shared how self-efficacy plays an essential role in sustaining motivation in goal-directive behavior and individuals' beliefs in their ability to plan and execute an action.

The qualitative results reflected the difficulties the patients experienced. Before the beginning of the program, some patients expressed their fears and concerns about managing their COPD. After completing the eight-week training program on strengthening self-efficacy, their worries and concerns were no longer issues. The study's limitations were the same repetitive questionnaire used throughout the eight-week period, which might have become a burden to the patients and skewed their responses. Despite the limitations, this study used the self-efficacy theory framework. It extended evaluation as an assessment for improving both short-term and long-term self-efficacy in patients with COPD.

Self-Management

According to (Baker & Fatoye, 2017; Jonsdottir, 2013), self-management was embedded within the notion of self-care, which refers to activities that individuals, families, and communities undertake intending to protect and enhance health and preventing disease. Jonsdottir (2013) qualitative study presented self-management as an ongoing and dynamic process that consists of three categories: (a) focusing on illness

needs, (b) activating resources, and (c) living with a chronic illness. Although the focus was on the effectiveness of self-management programs for people living with COPD, the results showed that self-management conceptualizations are likely to be health care professional centered more than patient centered. The results from the outcome measurements and the effectiveness of self-management were insufficient for behavioral outcomes and health-related quality of life. Furthermore, the relationship and interaction between patients and healthcare professionals were absent from this study. Therefore, the research was inconclusive as to the effectiveness of self-management programs for people with COPD.

Facchiano, Snyder, and Núñez (2011) and Jurns (2019) conducted a review of the literature on models and strategies for managing COPD. These included a self-management strategy known as "breathing retraining", which is part of a six stage evidence based practice model by Rosswurm and Larrabee (1999). The model's six stages assessed for: (a) change, (b) linking the problem with intervention and outcome, (c) synthesizing best evidence, (d) designing practice change, (e) implementing and evaluating change, and (f) integrating and maintaining practice change. Although healthcare workers adopted this model, there was a need for educational programs to teach individuals the necessary skills on medical regimens specific to their disease. Rosswurm and Larrabee's (1999) evidence-based practice model guides healthcare providers through a systematic process for evidence-based practice change utilizing change theory and a combination of quantitative and qualitative data along with clinical expertise.

Treatments

Medication

There is no cure for COPD, but there were treatments to alleviate the symptoms, improve patients' quality of life, and control the disease progression. Some of the listed treatments included anti-inflammatory therapies, bronchodilators, and inhaled corticosteroids (Clarke, Lundy, & McGarvey, 2015). One oral anti-inflammatory drug called Roflumilast was reviewed by (Rabe, Bateman, O'Donnell, Witte, Bredenbroker & Bethke, 2005; Shah et al., 2016) on the safety and efficacy with patients with moderate to severe COPD. A total of 1,411 patients were recruited from an outpatient setting where 576 were assigned Roflumilast 250ug, 555 were given 500ug, and 280 a placebo. A total of 1,157 patients completed the survey and improved post bronchodilators FEV1 from baseline by 97ml using Roflumilast 250ug. Roflumilast is a promising candidate for anti-inflammatory COPD treatment because it improves lung functions and reduced exacerbation (Rabe et al., 2005; Shah et al., 2016).

Although inhaled corticosteroids and bronchodilators were endorsed in international treatment guidelines (Gold, 2017), only a small proportion of COPD patients showed significant improvements on these drugs (Clarke et al., 2015). Concerns about possible adverse effects of these medications focus mainly on the high dosage of medicines for COPD patients.

Alternative therapies like phytomedicine can reduce the possible adverse effect from the high dosage of (corticosteroids & bronchodilators) medicine. Phytomedicine was a traditional medical practice that used plant materials to prevent and treat lung

diseases (Clarke et al., 2015). Phytomedicine has shown that both plant therapy and conventional therapy can significantly reduce symptoms, improve bronchodilation, and improve lung function. Clarke et al. conducted clinical trials with COPD patients who had comorbidities and found one of the side effects resulting from inhaled corticosteroids was pneumonia. The use of alternative therapy phytomedicine reduced the disease exacerbation and improved the quality of life, representing a significant treatment for those with COPD (Clarke et al., 2015). The authors recommended further study on the alternative therapy phytomedicine to treat COPD patients because there were not enough clinical trials to confirm the usage as an efficient replacement for conventional treatment. Although pharmacologic treatment with long acting inhalers was associated with improved dyspnea, this was linked to substantial costs (Schroff et al., 2017).

Current clinical evidence revealed inhaled corticosteroids (ICS) fail to prevent disease progression or mortality in COPD patients (Hakim, Adcock, & Usmani, 2012; Hakim et al., 2019). The authors conducted the following studies which included high doses of ICS and their outcomes: (a) a 2-year double-blind, randomized, placebo-controlled trial which did not affect the decline of FEV in COPD patients, (b) several long-term clinical studies that did not affect the annual decline in FEV1 in comparison with the placebo and (c) high-dose budesonide which did not affect respiratory symptoms and no significant reduction in disease exacerbation (Hakim et al., 2012; 2019). They found that the current guidelines recommend using high doses of ICS only for patients with severe diseases (FEV1 <50% predicted) to see a significant change in their disease progression.

Another form of medication treatment for COPD was oxygen therapy. Unlike prescribed medications, oxygen therapy was not prescribed for all COPD patients. Prescriptions were written for individuals who fell under the Medicare guideline of oxygen saturation (88% or PaO2 <55 mmHg; or SpO2 89% or PaO2 56–59 mmHg) and with either: (a) dependent edema suggesting congestive heart failure, (b) pulmonary hypertension or cor-pulmonale, and (c) hematocrit 55% (Nishi, Zhang, Kuo, & Sharma, 2015). Oxygen therapy can help with increased shortness of breath and any physical exertions. Although oxygen is often prescribed for patients in the hospital, a valid diagnosis prescription should be done after discharge, and patients are in stable condition. Nevertheless, oxygen was used by severe COPD patients and can be a pre qualifier for pulmonary rehabilitation programs.

Pulmonary Rehabilitation

Pulmonary rehabilitation was defined as a comprehensive intervention based on thorough patient assessment, followed by a patient tailored therapy, which included exercise training and education on behavior change designed to improve the physical and psychological condition of people with chronic respiratory diseases (Spruit, Pitta, McAuley, Zuwallack, & Nici, 2015). Part of pulmonary rehabilitation helped individuals with COPD increase their physical tolerance, do more daily activities, promote long term adherence to health enhancing behaviors, and improve their self-efficacy.

Spruit et al. (2015) found that setting different goals and monitoring played a significant role in patients' physical activity in their daily lives. One form of being accountable for exercising was a self-reported activity for example: (a) daily walking and

jogging, (b) direct monitoring via a coach, (c) pedometer, and (d) other recording training devices. For example, a patient would tolerate vigorous exercise training with a coach but lived a sedentary life outside of rehab. For COPD patients, exercise training improved muscle function and mass, contributed to a better quality of life, and reduced the risk of exacerbations and hospitalization (MacNee et al., 2014; 2016). According to Spruit et al. patients with COPD do not appear to increase the amount of time in moderate to vigorous intense activities after pulmonary rehabilitation. However, they can still adopt a more active lifestyle by engaging in leisure activities or doing more household activities.

Pulmonary rehabilitation has been demonstrated to result in significant improvement in dyspnea, exercise capacity, psychological symptoms, and quality of life, and the cost per quality adjusted life year was substantially less than pharmacologic therapy (Schroff et al., 2017). Schroff retrospectively analyzed 229 COPD patients' data with a mixture of mild and severe symptoms in a 12 week pulmonary rehabilitation program. The baseline capacity for a six minute walk test, dyspnea, exercise capability, and overall quality of life was measured before and after starting the 12 week program. After completing the program, there was some improvement in areas however, the progress range from the severity of the individuals' COPD disease.

People with mild COPD showed a greater improvement as opposed to those with severe COPD. Contrary to the program's success, the participants who did not show any improvement in dyspnea or exercise capacity had severe COPD, or the program was not tailored to the severity of their disease. One limitation of this study was that the information gathered was from individuals who completed at least 20 exercise sessions

and completed the questionnaire. This process may have ruled the right participants who showed significant improvement from only attending the classes and not filling out the questionnaire. Schroff et al. recommended the current guidelines include pulmonary rehabilitation to all patients with COPD, regardless of their baseline level of disease burden.

Welch (2016) found that pulmonary rehabilitation was also considered a low-cost intervention delivered by healthcare professionals of varying disciplines. Pulmonary rehabilitation can be recommended for stable patients or a referral after an acute exacerbation hospital admission. Not only would this serve as a form of exercise, but it was an important component in the management of COPD on improving health related quality of life and exercise capacity (McCarthy et al., 2015; Welch, 2016).

Organization Support to Health Care Providers and Patients

Partridge (2012) conducted a qualitative study with 1,022 asthma and 719 COPD patients in five European countries regarding the expectation of their interaction with health care professionals. As part of the survey, Partridge distributed a questionnaire to patients with asthma and COPD and found that 83% of the patients saw the doctor roughly every 13.4 months for approximately 12 minutes each time. In this short visit, not all patients were happy with the discussion between the health care worker and themselves. Poureslami et al. (2020) also found in their qualitative study that patients expressed a concern on the short in person visit times with their doctor, not to exclude the waiting time to get an appointment. The purpose of this qualitative research study was to

gather information from both patients and healthcare professionals on ways to improve patient's self-management skills.

Patridge (2012) collected data from both patients' and health care professionals to implement a self-management tool. This self-management tool was a pictorial action plan that would close the gap between patients and health care workers with realistic drawings in both words and pictures to address any health literacy problem. On the other hand, Poureslami et al. (2020) stated the importance of health literacy in disease management. Still, the focus should first be on what mechanism and approach are needed for patient engagement in self-management practices. Both self-management tools were referenced as support for asthmatic patients and COPD patients with similar symptoms (Partridge, 2012). In conclusion, the self-management tool turned out to be effective once the health care professionals devoted time to use and discuss with the patients about their disease, support/resources, and medication adherence, ultimately resulting in significant improvement in patient health literacy.

Patient end of Life

Trueman and Trueman (2011) conducted a study to assist in identifying the palliative phase of COPD patients admitted to the hospital, approximately 15% of whom will die within three months, and 25% within one year. Palliative care was defined as the active, holistic care of patients with a progressive disease that aims to improve patients' quality of life and their families (Trueman & Trueman, 2011). The authors compared the resources for palliative care among COPD and cancer patients. They reported that a healthcare commissions national audit revealed that the provision of palliative care was

inadequate for COPD patients compared to cancer patients. Health professionals appeared to be reluctant or unable to define the palliative phase of patients with COPD, creating a barrier to providing palliative care. Rajnoveanu et al. (2020) also conducted a systematic review that concluded that none of the existing prognostic variables multicomponent indices were sufficiently reliable to be used as criteria for initiating palliative care.

COPD frequent readmissions to the hospitals was a sign of possible end of stage illness. Trueman and Trueman (2011) noted the lack of discussions between COPD patients and health care professionals related to end of life issues; many health professionals said there was insufficient time during appointments to discuss these end of life concerns. Rajnoveanu et al. (2020) also argued palliative care should be more symptom based and integrated alongside usual therapy to reduce suffering and increase patient and caregiver satisfaction. It was appropriate to provide timely palliative care to those in evident decline. This was easier to predict for cancer patients, but as Lorenz et al. (2008) argued, if palliative care was only available to patients who die predictably, most COPD patients would never qualify because the death's timing was uncertain until very close to the end.

Summary

Chapter 2 reviewed the literature on the prevalence of COPD, factors contributing to this disease, factors contributing to hospital readmission, treatment modalities, and COPD management. COPD was mostly found in the population over 45 years, and the frequent exacerbation factors were common. The themes that emerged from the literature were (a) education, (b) disease management programs, and (c) self-management. The literature included the association between a history of: (a) asthma, (b) comorbidities, (c) occupational exposure, (d) smoking, and (e) individual physical activity limitation with COPD. What was not known was how effective was the communication between the healthcare providers and patients on how to identify the factors that contributed to hospital readmission.

The success and failures of COPD readmission were determined by individuals' participation and the programs provided by the healthcare system and organizations. This study addresses the gap in identifying factors contributing to COPD readmission and address the education of the day-to-day maintenance of living with COPD. Chapter 3 describes the methods used to answer the research questions and address the identified gap in the literature, and identifying factors contributing to COPD readmission.

Chapter 3: Research Method

Introduction

In 2012, COPD became the third leading cause of death in the United States (CDC, 2017). With the focus on increased readmission rates in hospitals, many healthcare facilities implemented programs to reduce early readmission. Factors like patients' environmental exposure, lack of exercise, and medication noncompliance were recognized risk factors for readmission. In the literature research, little was known about other factors that might contribute to readmissions, such as patient education or access to COPD management tools in readmission occurrences (Leggitt, 2020; Ray, 2012).

The purpose of this qualitative, interpretative phenomenological study was to explore the lived experiences of the patients' factors that contributed to the readmission of COPD exacerbation. The themes obtained from the literature were analyzed with the information obtained from the interview questions. The data collected from the participants were their lived experiences of: (a) education, (b) pneumonia, (c) smoking, (d) occupational exposure, (e) age, (f) medication, and (g) the healthcare system significant to hospital readmissions. The hope for the information discovered through the interview process was to formulate a COPD management program for hospitals, physicians' offices, and clinics in the surrounding area. This chapter addressed the following sections, (a) research design and rationale, (b) role of the researcher, (c) methodology, (d) issues of trustworthiness, and (e) a summary.

Research Design and Rationale

This qualitative study was done with a phenomenological approach. Creswell and Creswell (2017) stated that a phenomenological approach was best suited to gain an in depth understanding of shared experiences of individuals engaged in a common task or develop a deeper understanding of a phenomenon's features. The phenomenological approach explores how people made sense of (or interpret) their experience (Thorpe & Holt, 2008). To get a real understanding of the participants living with COPD, interpretive phenomenology approach was used to provide a detailed examination of individual lived experience (Smith & Osborn, 2015).

The patients' lived experiences of factors that influenced hospital readmission behavior for COPD as opposed to the actual behavior of readmission were examined. This approach was most appropriate for this study because it allowed participants to talk about their hospital readmission experiences via a one on one interview. This approach also allowed the researcher to understand the participants' lived experiences (Alase, 2017).

Each participant was allowed to share their lived experiences on factors contributing to hospital readmission and education. The accumulation of the answers collected was used to answer the following research questions:

Main question: What are COPD patients' lived experiences of having COPD?

Sub questions:

1. What are COPD patients' lived experiences of the factors contributing to COPD hospital readmission?

2. What are COPD patients' lived experiences of the role of education in reducing readmission rates?
3. What are COPD patients' lived experiences of the role of physical activity in COPD readmission?
4. What are COPD patients' lived experiences of the role of the healthcare system in readmission?

This research design allowed participants to discuss their feelings and concerns regarding the factors that contributed to early hospital readmission. According to Alase (2017), interviews are "participant-oriented" that allows the research participants to express themselves and their lived experiences.

Role of the Researcher

As the researcher/ interviewer, I developed the interview questions, conducted one on one interviews, and collected rich data. The relationship between me and the participants was strictly professional, and all participants received a consent form before participating in the interview. The study was conducted in the patient's private room with the door closed for noise control. The location and population were structured to qualified COPD participants, eliminating any personal bias or nepotism in conducting the study.

With a registered respiratory therapist background, I worked with many COPD patients during their acute phase of exacerbation, and I previewed the severity of their illness. As such, my hope for developing a COPD management program is a priority for me and any respiratory department. I am biased toward implementing a COPD management program at my hospital to assist with the many COPD patients we serve. In

the interview, I asked non leading, open ended questions to allow the participant to describe their own experiences. For accuracy, the interviews were recorded to help document word for word and not paraphrase the information based on my COPD knowledge.

Methodology

This research was a qualitative study of human perceptions. Creswell and Creswell (2017) provided a detailed description and interpretation of the problem, present the participants' voices, and extend the literature or signal a call for action. In the qualitative approach, data were collected and recorded for accuracy and legitimacy. Data were collected via tape recording during the in depth interviews between the participants and myself.

Population and Sample Recruitment

The population for this study was people living with COPD. For this study, criterion sampling was used to recruit the participants. Criterion sampling worked well when all individuals studied represent people who have experienced the phenomenon (Creswell & Creswell, 2017). A sample group of 10 participants were recruited and met the inclusion criteria: (a) have been hospitalized with COPD exacerbation twice within 30 days or less, (b) an official diagnosis of COPD from their physician, and (c) age 18 years and older. A flyer was posted in the designated Pulmonary physician's office with information soliciting participants for the study (Appendix A). The process was to have the participants call to be a part of the study, and I will screen them to be sure they meet the listed criteria.

During the telephone conversation, I would have asked their age, how long a physician has officially diagnosed them with COPD, and when they were hospitalized twice within 30 days for COPD exacerbation. Unfortunately, there was a deviation in the recruitment process, and I never conducted a phone screening, and it would be discussed in chapter 4. The interview questions were prepared the same for participants, and the data from the interview were recorded for accuracy. I came to saturation at 10, and no more participants were recruited to participate in the study. According to (Malterud, Siersma, & Guassora, 2016), the overall concept for sample size in a qualitative study is "saturation". The final sample size would be the number of completed interviews.

Upon meeting the initial criteria, I provided the participants with additional information on the study and set up an interview time. Before the interview was conducted, the participant read and sign the written consent to participate. If for any reason, they did not want to participate or preferred to reschedule the day of the interview, I was prepared to follow suit with the participants' request.

Context of the Study

I searched social media groups (LinkedIn), two hospitals, and three physician offices between Athens and Loganville, GA. I spoke with the clinical coordinators and directors, and one physician's office agreed to participate in the study. I provided the clinical manager with the flyers, and she gave me with a letter of agreement to conduct the study at this physician's office, use the conference room, and conduct the interviews.

Instrument

The instruments used in this qualitative study were the interview questions in Appendix B and an audiotape recorder. The interview questions were developed using the HBM to explore the participants' opinions of their diagnosis and healthcare experience, including barriers and plans for better quality healthcare. According to Alase (2017), interviews are "participant oriented" that allows participants to express their lived experiences. As the investigator, my goal was to capture the patients' rich data via probing questions that get the patients to express any underlining concerns. The probing questions were followed up questions that took the discussion into deeper territory, with or without specific reference (Tolley, Ulin, Mack, Robinson, & Succop, 2016; Ulin, Robinson, & Tolley, 2005). For example, "Tell me what you thought?" or "Then how did you proceed?" and "I am not sure what you mean. Can you break it down for me?" The interview questions stimulated a working conversation between the participants and myself on why they believe they are being readmitted for COPD exacerbation.

The device used to record the conversation for accuracy was a mini handheld tape recorder. I purchased multiple tape cassettes for each participant to have a 120-minute cassette allotted to their interview. The cassette was large enough to write participant and a number to support in the data analysis collection.

Pilot Study

The data collection process was conducted according to the procedures outlined in the proposal approved by the Institutional Review Board (approval number 04-18-18-0132955). Interviews were conducted at my workplace with three fellow respiratory

therapists to get an example of time, content, and setting for the study. These therapists served as a pilot study to test the questions' validity and reliability, the recording equipment, and the allotted time for the one-on-one interviews. The feedback generated from the therapist helped formulated the process for conducting interviews with the qualified participants.

Due to a change in the recruitment process, no pilot study was conducted with the first two participants. However, the information listed here was an outline for the process. A pilot study can be done with the first two participants who met the criteria and agree to participate in the study. According to Crossman (2020), the fundamental purpose of conducting a pilot study is to: (a) identify and refine research questions, (b) figure out the best approach, and (c) know how much time and resources will be needed to complete the larger version. Upon completion of the pilot study and expert panel review, I will make the necessary changes as required.

Data Collection

In qualitative research, the three primary data collection methods were observation, in-depth interviews, and group discussion (Tolley et al. 2016; Ulin, et al., 2005). The observation route was not chosen for this study because it does not obtain the participants' experiences living with COPD, nor would a group discussion provide individual experiences. Therefore, in this study, I used an in-depth interview to capture valuable data from the participants. I conducted interviews with at least 10 participants at the designated location, and the interviews were done on the selected day and time for the participants. Interviews were conducted in the participants' room to control privacy and

interruptions for a minimum of 40 minutes. Extra time was allotted for additional information or clarification of any questions. The interview questions (Appendix B) addressed the reasons for readmission and the need for education on the disease. The interviews were tape-recorded for accuracy. If the participant refuses to be recorded for any reason, I was prepared to recruit another participant for the interview.

Although there was no telephone conversation with the participant, the initial plans were as follows. In the initial telephone call from the potential participant, I will introduce myself, explain my purpose for the study, and review the inclusion criteria. I will also explain the confidentiality and security of the participants' protection. If the participants agree to participate in the study, I will inform them that a signed consent form will be needed before the start of the interview. At that time, an interview time will be scheduled with location and date. Upon agreement to participate in the study, I will advise the participants with an overview of how the interview session will be conducted and the number of questions that will be asked. I will also explain to the participants that there may be additional questions for clarification on the information. Interviews will be conducted with participants in the conference room at the physician's office.

I will ask the participants to provide me with convenient times to conduct the interview. I will then schedule a convenient time for them that fits with the physician's office availability. Participants will have the opportunity to answer each question to the best of their ability. A financial incentive of a $5 gift card will be provided at the end of the interview. I will make every effort to complete the interviews with the participants in

the allotted time of 40 minutes minimum to prevent transferring the face-to-face interviews to telephone interviews.

On the interview day, I will ask participants to read and sign the consent form. The tape recorder will begin after asking the patients their names, and I assign them a number. I would explain to them that no name will be mentioned in the recording, only given numbers. The face to face interview will be audiotaped and transcribed. Upon completing the interview, all participants will be cross referenced by their number, for example, Participant 1, Participant 2. I will also request a mailing address or an email address to forward a copy of the transcripts so that the participants can review on their own time. I will again thank them for participating and distribute their $5 gift card for participation. There will be a follow up with the transcript's mailing or emailing to verify information or recording after the designated interview day. At the end of the session, recorded data will be maintained in a locked cabinet for a minimum of five years as required by the university.

Data Analysis

For this study, I will use Colaizzi's phenomenological approach to analyze the data after all the transcripts were completed. Colaizzi's method consists of seven stages. These stages are: (a) read the participants' descriptions to gain a sense of whole content, (b) identify and code the units in the experiences like phrases and sentences about the experience, (c) identify the meaning of each significant statement, (d) organize the clusters of themes from the grouping of multiple meaning, (e) compare the theme clusters to the original description to validate the groups and to examine discrepancies, (f)

develop a statement of the essential structure of the experience, (g) have the original participant review the detailed description for validation of the original experience (Colaizzi,1978; Cruickshank, 2007; Morrow, Rodriguez, & King, 2015). Reviewing the data was done after the interviews were concluded. Participants were not allowed to review their transcripts via mail or email and comment on any changes as necessary due to the recruitment site. Upon completion of the interviews, the original audiotapes responses were transcribed for coding and mapping.

Issues of Trustworthiness

Credibility

According to Trochim (2020), credibility criteria involve establishing that the results of qualitative research are credible or believable from the participant's perspective in the study. In this research, it was important to spend ample time with each participant to ensure all questions are answered from the patient's own beliefs or experiences. Analysis of the data must be bias free. I shared the analyzed data with a friend for clarity and to ensure no noted bias.

Transferability

According to Trochim (2020), transferability refers to the degree to which qualitative research results can be generalized or transferred to other contexts or settings. The validity of the data is expected to confirm that readers of this research will comprehend and verify the experiences shared by the participants. In alignment with the study transferability, I provided a detailed description of the recruitment process,

interview questions, and sample size. The information obtained can be repeated in another population and end with similar conclusions.

Dependability

According to Trochim (2020), the traditional quantitative view of reliability is based on the assumption of replicability or repeatability. Essentially it is concerned with whether we would obtain the same results if we could observe the same thing twice. To this end, I ensured that the appropriate amount of time was allotted to everyone via the recording of the one-on-one interview sources, and the exact same questions and context were used for each participant. Dependability is the qualitative counterpart to reliability. Reliability is a detailed outline of the research to be used in future studies.

Confirmability

According to Trochim (2020), confirmability refers to the degree to which the results could be confirmed or corroborated by others. The researcher can document the procedures for checking and rechecking the data throughout the study to keep it bias free.

Ethical Protection of Participants

This study was guided by the Institutional Review Board's policies and procedures (IRB) of Walden University (approval number 04-18-18-0132955). Creswell and Creswell (2017) advised that the IRB protects against human rights violations and verifies the study for any potential risk, physical, psychological, social, economic, or legal harm to the participants. Upon approval from the IRB, the collection of data was conducted with all qualified individuals. Potential participants were free to decide

whether to participate. When they did decide to be involved, participants signed a consent form, and confidentiality was protected. If participants became uncomfortable, they were allowed to discontinue the interview process without any repercussions.

The information collected from the patients were kept in a secured file for data analysis. All contact information was stored in a secure file cabinet at my home office. All names will be discarded after acceptance into the study. A number and "participant" were used to associate information from each individual. An incentive of a $10 gift card was given to all participants upon completion of the interview. I informed the participants that the tape recording would be stored no less than five years and not be accessible to anyone outside my dissertation committee.

Summary

The phenomenology method was used to obtain information from the individual interview with the participants. The interview provided a foundation for the individual's current role and knowledge of COPD's awareness and management. The interview responses from the 10 participants provided the necessary information to answer the research questions. Criterion sampling was used to make sure I targeted the right population, and the interviews were all audiotaped. A discussion of the results is detailed in Chapter 4, along with any interview changes.

Chapter 4: Results

Introduction

The study primary purpose was to explore patients' lived experiences of factors that contributed to hospital readmission with COPD exacerbation, including education, pneumonia, smoking, occupational exposure, age, medication, and the healthcare system. In this chapter, I discussed the data collected from participants living with COPD.

The primary research question was: What are COPD patients' lived experiences of having COPD? There were four sub questions:

1. What are COPD patients' lived experiences of the factors contributing to COPD hospital readmission?
2. What are COPD patients' lived experiences of the role of education in reducing readmission rates?
3. What are COPD patients' lived experiences of the role of physical activity in COPD readmission?
4. What are COPD patients' lived experiences of the role of the healthcare system in readmission?

The information from this study could lay the foundation for developing a management program to reduce COPD hospital readmission rates, which potentially can reduce health care spending and significantly improve the quality of life for COPD patients. This study's results could also provide the basis for a structured program for individuals and healthcare professionals, which would contribute to positive social change.

Pilot Study

The pilot study was done with three respiratory therapists instead of using the first two participants, as mentioned in Chapter 3. The pilot study's purpose was to review the interview questions for content, validity and reliability, clarity, allotted time, and testing of the recording equipment. First, I started with individual timed interviews with each therapist in a quiet classroom, which consisted of introductions, a review of the consent form, and the interview questions. After the interviews, the therapists suggested: (a) give the participants a copy of the questions to follow along because some of the questions appeared a little advanced, (b) explain to the participant how the questions are broken down into sections to eliminate any anxiety, and (c) always ask if they need clarification on a question because I had to clarify some of the questions during the interview.

Based on the feedback, I printed extra questionnaires for the participants to follow along as I read the questions aloud. I explained how the questions would be grouped and reminded the participants to ask questions for clarification.

During the pilot study, the MP3 recorder did not work for pause and rewinding when I tried to review the interview, and the volume of the voices was not loud enough; therefore, I had to revert to a mini tape recorder to complete the last two interviews. The pilot test data were used to improve the interview questions and process and then I discarded the recordings.

Research Setting

I planned to recruit participants from a pulmonary doctor's office located in Georgia. This office treated patients with lung diseases, sleep apnea, and provides

pulmonary rehab services. I posted flyers in the office to recruit participants but was unsuccessful in obtaining clients from this location. However, I was contacted by a staff member from another healthcare organization who saw the recruitment flyer at the pulmonary doctor's office and contacted me about a couple of patients at her SNF who fit the study criteria. The SNF provided temporary housing for patients to regain control of their daily lives after hospitalization.

I was granted permission from the IRB to interview at additional sites like SNF, community health clinics, a local hospital, and a medical supply store. When the nurse administrator from the SNF contacted me, I agreed to conduct the interviews with eligible participants. I did not conduct an initial telephone pre interview as stated in Chapter 3, because of the initial contact came from the nurse administrator with qualified participants. Upon arrival at the SNF, I was given a list of patients with a diagnosed history of COPD, over 18 years, and hospitalized twice within 30 days. Interviews were completed within one day with five patients who met the requirements and agreed to participate.

The other recruited participants were four patients and one visitor at a local hospital in Athens, GA with 365 beds. The recruitment process at the hospital was structured by the hospital's IRB, which required an administrator to provide a daily list of hospitalized COPD readmitted patients. I was only allotted two weeks to complete any interviews with qualified and volunteered patients. From that list, I informed the patients of my study and ask if they would participate. One of the participants was a visitor in the hospital where I was conducting interviews. All participants received a $10 gift card for

participating in the interview, except one who refused the gift card and suggested I donate it to someone who needed it. The first reward for participation was a $5 meal card, but I was not getting any participants, so I increased the value to a $10 gift card to a local store.

Demographics

As shown in Table 1, the sample for this study included four males and six females. All participants satisfied the criteria: all were over the age of 18, had COPD, and had been hospitalized twice within 30 days. I numbered the study participants one through 10 to protect their identities. The participants came from different areas of Georgia. Seven of the 10 participants were African American, and three were Caucasian. Eight of the participants had a history of smoking, and two did not. Today, only one of the participants is still smoking, and the other nine stopped. Five of them were residents in the SNF with a history of COPD and several comorbidities that directed them into the path of an SNF. These participants were transferred to the SNF after a hospital visit that required them to obtain continuous care with their daily lives.

The other five participants were patients in the hospital with admittance for COPD and a visitor who was visiting his wife on the pulmonary floor. This person also met the criteria for the study and asked to be involved. The discussion with the participants regarding their history of COPD was treated with respect and dignity because the participants were hospitalized patients at the time of the interviews.

Table 1

Participants Demographic Information

Participant	Gender	Race	Hx smoking	Currently smoking
1	Male	African American	Yes	No
2	Male	African American	Yes	No
3	Female	African American	No	No
4	Female	African American	Yes	No
5	Male	African American	Yes	No
6	Female	African American	Yes	No
7	Female	Caucasian	No	No
8	Female	Caucasian	Yes	Yes
9	Female	African American	Yes	No
10	Male	Caucasian	Yes	No

Data Collection

After reviewing all 10 participants' taped recorded interviews on lived experiences of having COPD, I documented all the notes on the interview guide to match the questions. The data collection process was done at different locations as opposed to the physician's office listed in Chapter 3. The first five interviews were done on the same

day at the SNF in each participant's private room, and the other five were done at the local hospital for over one week. I allotted a time of 40 minutes, but some were done just shy of 40 minutes, and the others surpassed the 40 minutes allotment time. Before conducting the interviews, all participants read the consent form and asked questions before signing. I further explained that their signature was only for consent to participate and that they would be identified as a participant with a number. All data were collected via tape recording and stored until analysis.

After listening to the recorded interviews, I used Colaizzi's method to analyze the data. I took notes relative to the questions asked and reviewed the data collected for themes that I identified from the response to the questions. I identified several themes that fell into the main categories of: (a) education, (b) physical activity, (c) healthcare system, and (d) contributing factors to readmission. Participants shared their lived experiences of hospitalization and post-acute care of living with COPD.

There were some variations from the original plans in Chapter 3. First, I planned to recruit participants from a pulmonary office. However, the venues changed due to lack of participation. Secondly, I did not obtain a follow-up email or mailing address to forward a copy of the transcript for verification because the participants in the SNF did not have access to emails and it was not clear how long they would continue to be at the SNF. In addition, the hospital patients I interviewed were aware of the opportunity but opted out for reviewing of the transcripts. The opportunity to review the transcript was included and discussed on the interview guide. It would not have been consistent if some were accessing emails, and others were not, because I requested a five day reply with

needed corrections. Finally, I did not conduct an initial phone interview with the participants because either they were temporarily residing in an SNF and were identified by the nursing administration or they were patients in the hospital (excluding the visitor), where the recruitment process was different from participants calling me for inclusion into the study. The only unusual circumstances encountered in the data collection was the recruitment of the visitor.

Data Analysis

I reviewed the data several times to identify categories of data and patterns. As I identified statements, words, and phrases in response to the research questions, I was able to identify 31 codes, that resulted in nine themes: (a) physical signs and symptoms before hospital readmission, (b) other factors before readmission, (c) personal factors that contributed to hospital readmission included patient's attitude towards self-care, (d) the knowledge of one's disease and how to manage it, (e) education on living with COPD is limited and needs expanding, (f) participants' understanding of the role of physical activities in self-care was very mixed, (g) the hospital discharge process can influence readmission, (h) the collaboration of the medical team working together, and (i) the importance of continuity of care before and after discharge. The themes and codes are listed in Table 2.

Table 2

RQs Themes and Codes

RQs / Themes	Codes
RQ1. What are COPD patients' lived experiences of the factors contributing to COPD hospital readmission? T1. Physical signs and symptoms prior to hospital readmission	• Shortness of breath was a common symptom before hospitalization • Swelling and fluid overload was also associated with readmission. • The common cough was another contributing factor before readmission
RQ1. What are COPD patients' lived experiences of the factors contributing to COPD hospital readmission? T2. Other factors prior to readmission	• Smoking is often associated with COPD readmission • Inability to attend regular doctor's appointments can contribute to readmission • Other health factors (comorbidity) also influenced readmission • Occupational exposure to environmental toxins • Household cleaning products were mentioned by one participant as a trigger to COPD flare ups • Premature release from hospital can also lead to early readmission
RQ1. What are COPD patients' lived experiences of the factors contributing to COPD hospital readmission? T3. Personal factors that contributed to hospital readmission included patient's attitude towards self-care	• Signs and symptoms of COPD were ignored by one of the participants • Sad emotions on living with a disease that has no cure • Positive attitude towards taking care of themselves after hospitalization • Accepting responsibility of treating their COPD • Participants felt COPD was a real threat to their lively hood

(tables continues)

RQs / Themes	Codes
RQ2. What are COPD patients' lived experiences of the role of education in reducing readmission rates? T4. Knowledge of one's own disease and how to manage it	• Participants had different levels of knowledge of the disease and how to manage it • Expressed the need to do their own research on COPD • Shared how they would like to educate individuals living with COPD • Believed they can reduce their own chances of readmission by being involved with their care • Two of the participants saw no association between pneumonia, smoking, or occupational exposure and their lung disease.
RQ2. What are COPD patients' lived experiences of the role of education in reducing readmission rates? T5. Education on living with COPD is limited and needs expanding	• There should be more education at the time of diagnosis • Brochures and literature were given to participants on COPD education • Some felt the need for more personal COPD education • Some received education from the nurses about COPD during their hospitalization
RQ3.What are COPD patients' lived experiences of the role of physical activity in COPD readmission? T6. Participants' understanding of the role of physical activities in self-care was very mixed	• Participants explained the physical limitations with living with COPD • The involvement in physical activity was good for CODP patients • Some participants mentioned the need for support group to help them from readmission
RQ4. What are CODP patients' lived experiences of the role of the healthcare system in readmission? T7. The hospital discharge process from the hospital can influence readmission rate	• The communication process with the patients or family member during discharge was very effective • Discussed the importance of effective communication during discharge

(table continues)

RQs/ Themes	
RQ4. What are CODP patients' lived experiences of the role of the healthcare system in readmission? T8. The collaboration of the medical team working together	• The value of a medical team involved in COPD management • The importance of doctors knowing their patient's medical history
RQ4. What are CODP patients' lived experiences of the role of the healthcare system in readmission? T9. The importance of continuity of care before and after discharge	• Some reported that the treatments and medication given in the hospital was very helpful in their recovery

Process

I transcribed the data one to two weeks after each recruitment site. I listened to the tape-recorded conversation along with the documented notes on the interview guide for pertinent information. I used P1, P2 at the top of the interview guide, and the cassette tape to represent the participants' information. At the end of the collection time, I was able to analyze the information of 10 participants. The answers from each question on the interview guide determined the codes. Upon gathering all the codes, I was able to summarize themes that were associated with the research questions.

Codes, Categories, and Themes

After going through the process of analyzing the recorded interviews, there were nine themes and 31 codes developed from the data analysis method. Table 2 has a breakdown of the themes and codes to match the research questions. The information

obtained described the participants' personal experience with living with COPD. The questions were structured to get detailed information on factors that influenced readmission. It focused on the overall health of the individual, the knowledge of the disease, and support groups, which consisted of family, organization, or healthcare workers.

Evidence of Trustworthiness

The data collection process was conducted according to the procedures outlined in the proposal approved by the IRB (approval number 04-18-18-0132955). This approval ensured that the data collection process adhered to the ethical considerations set forth by Walden University. Evidence of trustworthiness in this study was demonstrated by credibility, transferability, dependability, and confirmability.

Credibility

As noted in Chapter 3, it was important to spend ample time with each participant to ensure all questions were answered from the patient's own belief or experiences. To ensure trustworthiness, I ensured all participants spoke English and were educated enough to read and sign the consent form. I followed the steps mentioned in Chapter 3 to ensure credibility of the research.

Transferability

The validity of the data is expected to confirm that readers of this research will comprehend and verify the experiences shared by the participants. Data analysis was addressed by providing a detailed description of the research questions; the themes and codes arrived from the interviews. Also, transferability to other studies is achievable

based upon the data collection procedures listed in Chapter 3, sampling, participants, and data analysis compiled in Chapter 4.

Dependability

I followed through with the steps from Chapter 3 to ensure dependability. The appropriate amount of time was allotted to everyone for the interviews. The exact questions and context were used for each participant and method design for collecting data. The context can apply to any chronic disease program for future studies.

Confirmability

According to Trochim, (2020), confirmability refers to the degree to which the results could be confirmed or corroborated by others. I confirmed confirmability by checking and rechecking the data throughout the study to keep it bias free. No changes were done to affect confirmability.

Study Results

The primary research question for this study was: What are COPD patients' lived experiences of COPD? The interview questions were developed using the HBM in order to explore participants' opinions of their diagnosis, their healthcare experience, barriers, and plans for a better quality of life. The results were presented in themes by research sub questions.

The sub question related to the study tapped into factors contributing to COPD hospital readmission. As a result, nine themes emerged which included: (a) physical signs and symptoms before hospital readmission, (b) other factors before readmission, (c) personal factors that contributed to hospital readmission included patient's attitude

towards self-care, (d) the knowledge of one's disease and how to manage it, (e) education on living with COPD is limited and needs expanding, (f) participants understanding of the role of physical activities in self-care was very mixed, (g) the hospital discharge process can influence readmission, (h) the collaboration of the medical team working together, and (i) the importance of continuity of care before and after discharge.

Factors Contributing to Hospital Readmission (sub question 1)

Theme 1: Physical Signs and Symptoms Prior to Hospital Readmission

The first theme revealed from the analysis provided insight into factors contributing to hospital readmission. Participants were able to share the noticeable factors that affected their bodies before an exacerbation. Some of the symptoms were common to each other, and other symptoms were associated with other comorbidities. The participants identified the factors as shortness of breath, swelling and fluid overload, and coughing. The participants described the following sign and symptoms.

Shortness of breath (SOB) was a common symptom before hospitalization. This experience was widespread among the participants. Comments included, "Shortness of breath that was the one that made me go to the hospital. The doctor figured I should be put in the hospital" (P1); "Wheezing and SOB and my breathing gets hard that is how I know it is starting to get worse" (P2) and "Most of the times my breathing SOB is what starts, and it comes from my congested heart failure that affects my COPD" (P6).

Swelling and fluid overload was also associated with readmission. The swelling of the lower extremities appeared to be common among the participants. Some participants mentioned, "I notice I started swelling like everything gets big. Then I know

it is time for me to go to the doctor" (P2); "It just happened. I started swelling in my hands and feet, then one day, I could not breathe. Then I came to the hospital" (P6), and "my legs were swollen, my feet were swollen and my hands, I could not breathe, and I called 911" (P8). P3 also expressed that "One day the nurse came into the room, and I was not responding well, and she called 911. I had fluids on my lungs. I should have listened to my doctor, and I would not have ended up in the hospital".

The common cough was another contributing factor. Two participants felt that the common cough was what contributed to their readmission. P9 said: "I have a lot of drainage from my nose, and that causes a flare-up." Another explained, "I started with the tightness of the chest, and if I do not sit down and use my inhalers, it escalates to a dry cough, and it gets so raw at the back of my throat, and it goes from there" (P10).

Theme 2: Other Factors Prior to Hospital Readmission

The second theme revealed from the analysis provided insight into other contributing factors to hospital readmission. Outside of signs and symptoms, there were other factors to consider like smoking, inability to attend doctors' appointments, comorbidities, environmental exposure, and even being released from the hospital too early. The participants shared their experiences on how these factors influenced their hospital readmission.

Smoking was often associated with COPD readmission. Eight out of 10 of the participants were regular smokers in the past, and nine of the 10 had stopped. Participant one said, "Smoking and SOB… Oh, my goodness, I smoked for a long time, and I do not do that anymore. It has been about five years since I smoked, and I do not want anyone

around me smoking either". Likewise, P5 said, "I smoked for many years and never wanted to quit until my last hospitalization". P5 contributed his smoking history to poor circulation. He said, "that is the reason why I was smoking. They asked me to stop before, but I did not". There was only one participant who still smoked, and that was P8. She said,

> I was addicted and cannot stop. If I quit smoking, it will be better. It is just an addiction that is unexplainable because it goes against everything you should be doing, and you know as an intelligent person; you should not be doing it. A pack a day is many cigarettes.

Finally, P6 said: "being around people who smoked caused me to have a flare-up".

Although some of the participants spoke about smoking as a factor in their health, one participant identified the ability to attend regular doctor's appointments as a contributor to readmission. P7 described how missing doctors' appointments – because of not being able to find help in getting to and from her apartment - had contributed to her readmission.

> My living accommodations are a little compromised. There are steps that I must climb from the parking lot to my apartment. So, going back and forth makes it challenging to attend all my doctor's appointments. Sometimes I just physically cannot make it because of my health.

Additionally, other health factors (comorbidity) also influenced readmission. Comorbidity was another health condition that participants lived with. P6 explained, "I

have high blood pressure, diabetes, congested heart failure so whenever something goes off or get bad like that, it messes with my breathing, and I am back in the hospital every two weeks for my breathing". Also, P8 was diagnosed with congestive heart failure on her first admission and was treated with Lasix (a diuretic drug). However, she came back to the hospital again, this time with more emphasis on her lungs in conjunction with her heart.

Moreover, not only did the participants speak about internal health factors, but there were external factors like the environment they lived in. One of the environmental issues was occupational exposure. Participants worked in areas that were later determined detrimental to their health. For example, P4 said, "I spent most of my life in the classroom, and I taught. The school was an old school, and I think it had some asbestos; it was a very old school". Also, P6 said, "I worked with chemicals for about four years cleaning office building, and this was before I got diagnosed with COPD." P10 followed up with "Vietnam, think about it. Chemical exposure to Agent Orange still has not figured out what we were exposed to over there. There were chemical weapons that we used".

Another environmental issue was household cleaning products. P2 said, "Some of the sprays my wife uses at home like an incense spray would cause me to start coughing, and I was smoking heavily too, which associated with my COPD".

One of the last areas discussed on factors contributing to early readmission came from the following participants who felt they were released to early from a previous hospitalization. For example, P6 was in the hospital, and she said: "I was here for three

days, and I felt like I was not ready to go home because I still had swelling in my legs. I ended up coming back to the hospital the next day". On the contrary, P8 was recently admitted to the hospital, and she expressed,

> I felt they only addressed the heart and not the lungs when I came first. When I got home, I was still swollen, and it was hard to walk to the bathroom. I could not do it to my brother, so we called 911 again.

Moreover, P7 mentioned that,

> the doctor came in to assess me after my breathing treatments in the ER. I told him I felt better, and he mentioned you could go home tomorrow. I knew I was not in any shape to go home. I felt like I have been here so much that they became too complacent with me. Maybe I did not need to be here, but I did know that I could not breathe. I was taken back by it, but the care on the floors was excellent.

Theme 3: Personal Factors that Contributed to Hospital Readmission Included Patient's Attitude Towards Self-care

The third theme revealed from the analysis provided insight into other contributing factors to hospital readmission. Personal factors included the patients' emotions, attitudes, livelihood, and responsiveness to the self-care of the disease. This theme focused on the mindset of the individuals living with COPD. The participants were able to share their personal feeling on how COPD has changed their life. The participants gave a few examples of how they dealt with their disease.

For example, P8 ignored her signs and symptoms one year before she got to the point that she needed to be in the hospital. Being diagnosed with a disease that has no cure can mold the attitude of patients. She further said, “let us be honest; I have not been to the doctor in four years, and I probably had some of the symptoms for about a year and probably ignored it, and that is my fault”.

On another side, there were sad emotions noted on the association of living with a disease that has no cure. When the discussion focused on this, the emotions went from sad to questioning, “Why do I have this disease?” Although most of the participants had a history of smoking, P7 did not, and she was very emotional about living with COPD. She said, “I have never smoked or drink. I lived a pretty healthy life, and now I am living with this dreadful disease with no cure, and I am going to die”.

On the other hand, P5 had a history of smoking and has quit. He said, “Well, at my age, I want to be here as long as I can, that COPD is dangerous. It is not much help, but I think this is the best I am going to get with COPD”. Contrary to being sad, P10 showed determination on not believing in “no cure”, but he believed in making a way to slow down the disease process.

Totally opposite of sadness, there were positive attitudes noted towards taking care of themselves after hospitalization with COPD. Some participants had a more positive attitude towards taking care of themselves while living with COPD. For example, P3 said, “Well, I wanted to get healthier after my last hospitalization by eating right and exercise.” Then P6 said, “After my last hospital visits, my friend prayed for me over my COPD, and I have not been in the hospital for three months, and I got better to

me". P9 also said: "I am going to fight this and leave these cigarettes alone so I can see my grandbabies grow, and they said they are going to fight it with me too".

At the same time, P2 felt better after going to a skilled nursing facility as opposed to his previous discharge to home. He said,

> I think when I decided to come here to the nursing home, I started to do better. They make sure I take all my meds and they are continually monitoring me, by following the doctors' orders on what they recommend, diet, exercise, and medication to keep it under control.

Even though the participants were hospitalized for a COPD exacerbation, it was important for them to take responsibility for their care. Participants accepted the responsibility of treating their COPD. Taking responsibility for the treatment of COPD was acknowledged in different ways. For example: "I need to follow the doctor's orders on what they recommend on medication, exercise and follow the recommended diet (P2), and P10 said, "Yes, I am responsible for taking care of myself first by taking the medications the doctor prescribes and getting as much exercise and fresh air as I possibly can. I also do deep breathing exercises".

Living with a disease that has no cure was looked upon as a real threat to the participants. Many of the participants felt that COPD was a serious threat to their livelihood. For instance, "Well, it is a serious threat because it has done much damage to me. I have been in the hospital and now in this nursing home" (P2); "At the time, I had to go to the hospital, and it was very serious. I was in no shape to do anything" (P5), and "I know that I am dying, and there is nothing else they can do for me. I never thought I

would end up like this since I took care of patients all my life." (P7) Another example shared from P10 was:

> At this point in my life, it is serious because earlier on, it was not so bad. As I got older, the disease progressed further; they put a dual name on Emphysema. I discovered my lungs are eating themselves up from the bottom up.

Although the participants identified different factors associated with hospital readmission, they all shared their personal beliefs on living with COPD. Participants experienced shortness of breath, whether it was a symptom of an association with an external factor that resulted in hospitalization. Even though it was known that COPD has no cure, education was crucial to the participants on the treatment of the disease. The next research question addressed the educational role in readmission.

The Role of Education in Reducing Readmission Rates (sub question 2)

Theme 4: Knowledge of one's own Disease and how to Manage it

The fourth theme revealed from the analysis provided insight into the role of education reducing readmission rates. In order to get a better understanding on how education played a key factor in their readmission rate, it was important to address the participants' level of knowledge on COPD, and what they believed to be the root cause of their illness. The following experiences were described by the participants.

Participants had different levels of knowledge of the disease and how to manage it. The level of knowledge ranged from minimum, to medium, to high when it came to knowing about the disease. For instance, "I have very minimum knowledge of COPD"

(P1); “I have very little knowledge of COPD” (P5). P10 said his level of knowledge was “medium-high and I was educated via the VA system about COPD. They sat me down in a classroom and talked, read, and talked some more about COPD”. In addition, P8 said,

> I would say my level of knowledge is pretty high, and that being a smoker and being aware of the problem that smoking causes, COPD being #1 that people get in addition to lung cancer is something that I am aware of and my family members who have it. I see the TV commercials; I am very much aware of it.

Some participants expressed the need to do their own research on COPD. Although the participants mentioned receiving information from their physician, they still needed to know more, so they did some researching on their own. Two participants shared: “I went on my phone and read about blueberries, garlic, and stuff like that. Nutritional stuff that is good for you and your blood stream” (P5). P6 said,

> When I can’t get any information from the doctor, I go on the internet and I try to read up on COPD myself, but somethings I didn’t understand and I didn’t have anyone to ask, especially if you don’t have the problem you might not understand where I am coming from.

Contrary to fixating on one’s own health issues, participants shared what they would like to educate someone on living with COPD**.** There was a common theme on “no smoking” that surfaced when asked to educate someone else living with COPD. P2 said: “One thing is “don’t smoke” and stay away from stuff that you going to inhale and

breathe because it's going to mess up the lungs", P6 said "Oh God smoking is not good for you".

Finally, P10 said:

> I will take them under my wing and tell them look, I know this is a tough road. It is going be a lot tougher before it is over. This is things I have found, and I talk about the breathing exercise. If you can't walk, just get out in the fresh air, and sit there and breathe in every time you get a chance to.

In addition, some participants believed they could reduce their own chances of readmission by being involved with their care. Taking an initiative on being involved in one's own care was exemplified by some of the participants. For instance: "I immediately quit smoking those cigarettes so I would not end back up in the hospital" (P1), and (P6) said:

> I limited myself from other people who had the cold virus, I basically did not go anywhere other than to the doctor because I don't want to be sick. My doctor doesn't like me to be around other people because of my COPD and all the other issues my immune system is so weak.

Finally, P7 said "I try to do the best I can because I don't know what it is that keeps me in this cycle".

It was a little different for two of the participants (P3 and P7) who saw no association between pneumonia, smoking, or occupational exposure and their lung disease. Within the interview with 10 participants, the two participants who never had a

history of smoking had no association with pneumonia, smoking or occupational exposure. P3 said “None of the listed factors (pneumonia, smoking, occupational exposure) were associated with her lung disease” and P7 also stated, “I never smoked before in my life, but my daughter lives with me and she is a heavy smoker. I grew up in second-hand smoke”. The remaining participants had a history of smoking.

Theme 5: Education on Living with COPD is Limited and Needs Expanding

The fifth theme revealed from the analysis provided insight into the role of education reducing readmission rates. In theme four I focused on the level of knowledge regarding COPD. With the unknown of origin with some of the participants, and the ever-changing dynamics of the illness, participants shared what type of education they had received in the past or what would they like to assist them with COPD. The following experiences were described by the participants.

Participants stated there should be more education at the time of diagnosis. When asked if there was education provided at the hospital, one participant answered, “It would have made pretty good sense if they would provide education, instead of throwing medication at you all the time” (P3). Another participant stressed, “I think the doctor should provide education, I have COPD, he knows I am not going to understand. He is the doctor; he should talk to me and explain how things go” (P6). P6 also shared that no healthcare professional ever spoke with her about living with COPD. She expressed her frustration by saying, “I have been trying to figure out how to stay out of the hospital. No one ever came and talked to me about the COPD. The doctors just get you in and throw you out”.

Education came in different forms of communication for the participants. Brochures and literature were apart of COPD education. Some examples were, “They gave me brochures/literature, they came in and talked about my diet and what I should eat and gave me a scale to weight myself for any weight gain over five pounds possibly identifies fluid building up” (P2), and “They gave me a little book and they went over it with me. My little granddaughters went over it with me too” (P9). P10 said, “Oh yeah, we have a source media room where you go down and plug in tapes, CDs whatever you need on the subject, but that wasn’t enough for me”.

Furthermore, some felt the need for more personal COPD education. Some participants relied on the help of doctors to provide education and support on COPD, but the participants felt that you have to want to do it. “I am hoping I would get the support from my doctor with my follow-up appointments, and hoping they would give me the necessary maintenance to help my COPD”. P5 said,

> The doctor gave me a squeeze ball to help work my hands and fingers and I think I will live a little while longer. I was sent to physical therapy and made close to a 90% with my activities and that was then. If I go up there now it would be even higher since I let the cigarettes go.

If the education was not in a form of literature, it was done verbally. Some participants received education from the nurse about COPD to assist them during their hospitalization. Education on COPD can come from different healthcare professions and resources. Two participants stated “the nurse” provided education on breathing exercises to assist them while in the hospital. For example, “they still were teaching me. They try

to reinforce me with the slow breathing "purse lips" breathing along with a small piece of paper to explain it all" (P7), and P8 also mentioned,

> They explained the whole concept of the bronchial tubes going to the air sacs and how the fluids are pushed out and what causes infection or bronchitis. One of the night nurses sat me down and taught me the slow breathing.

Some participants were very knowledgeable about the disease and others were alarmingly not. A majority of the participants believed COPD was a serious threat because of what was told to them but wanted to learn more on living with the disease. Two participants expressed no association between pneumonia, smoking and COPD, but the others mentioned the history of smoking and possible occupational exposure.

The Role of Being Physically Active in Contributing to Readmission (sub question 3)

Theme 6: Participants' Understanding of the Role of Physical Activities in Self-care was Very Mixed

The sixth theme revealed from the analysis provided insight into the role of being physically active in contributing to readmission. When it came to being physically active, participants had different variations of physical activities. This theme identified the variation and limitations on what everyone could do. Below are some responses described by the participants.

Some participants explained their physical limitations with living with COPD. For instance. P6 said:

> I can't exercise because of my disease that affects the muscles in my legs. Some days I can cook in my kitchen with a chair in there so I can rest. I also was going to physical therapy one time for 8 weeks to help get me back on my feet.

P9 said "The only exercise I was doing was walking. I like to go to my other daughter's house to walk up her stairs and play with the three-month-old little girl". Physical activity appeared to be challenging for everyone. However, there were some notations of the simple things as watching TV, taking a shower, going outside, taking a little walk that some "healthy people" may take advantage of, but actually means a lot to this group.

On the other hand, their involvement in physical activity was good for COPD patients. Participants shared the following experiences. P2 described a

> Typical day when I am at my best is when I am getting out of bed, moving around, interacting with others, and going outside at the facility. I can take a shower and use the bathroom on my own as oppose to at home I just stayed in the bed.

P9 shared that, "A wonderful day for me is, no pain, no SOB, relaxing with a glass of tea on the porch, laughing and talking and walking with my granddaughters". And lastly P10 expressed what it means to have a good day. "I am at my best when I go hunting, fishing, camping, and wrestling with my son. Moving around on campsites on the river and throwing rocks".

Even though they tried to do some activities on their own, some participants mentioned the need for support group to help them from readmission. Continual care for

these participants were identified as skilled nursing facilities, dieticians, and audio-visual materials for support. For example: “When I came to the nursing home I got better versus when I went home (P2). P3 felt that eating right, and someone to help her with her meals will help her get healthier with her condition, since she couldn’t walk without assistance from 2016. P9 said “I would like to get some videos on how to help keep me active living with COPD”.

Pulmonary rehab was a program that helps COPD patients with exercise that can assist with their daily functions. A few of the participants mentioned physical therapy, but no one knew about pulmonary rehab. Pulmonary rehab is part of the healthcare system that is typically referred to patients from their doctors or healthcare workers.

The Role of Healthcare Systems in Readmission (sub question 4)

Theme 7: The Hospital Discharge Process from the Hospital can Influence Readmission Rate

The seventh theme revealed from the analysis provided insight into the role of healthcare systems in readmission. This theme focused on the discharge process which was very instrumental in providing education to patients going from hospital to home or SNF. The information obtained from the patients reflected some concerns on how the communication was done during the discharge process. Below are some examples of the responses.

The process of communication to the patient or family during discharge was effective when directed to the patient. When asked about the discharge process, P6 was pleased with their process. “Sometimes people just sign, and I have done it too, with not

asking any questions. With them going over it orally with me, it helped when they explained what medication I took and which ones I should take later. They do pretty good with that process". P7 said "They answered all of my questions during discharge and made all my follow-up appointments".

Effective communication was important during discharge. The participants mentioned how receiving the discharge information makes a difference in how they should proceed. Some participants said their follow up appointments were made, but they were not asked if they could get there. They also spoke about prescriptions that were given without any explanation on how to use or what it was for. Improving the hospital discharge process to prevent readmission requires a focus on the coordination and communication between inter-professional team members in and outside of the hospital as well as with the patients and their caregivers (Prusaczyk et al., 2019).

Theme 8: The Collaboration of the Medical Team Working Together

The eighth theme revealed from the analysis provided insight into the role of healthcare systems in readmission. The healthcare system consisted of nurses, doctors, respiratory therapists, and social workers. This list of professionals are typically connected under a healthcare facility where the patient and provider communicates with each other. Following are examples of the communication collaboration the participants described.

A medical team was important in COPD management. The participants were very excited about their assigned healthcare workers (doctors, nurses, and respiratory therapists) were working together during their hospital visit. Some of the examples were:

"I am very happy with the doctors; they have been working well with me and together, my cardiologist and lung specialist for example. They were both in here together discussing my care". (P8). Another example shared by P9 was "The team worked together doctors and nurses this time, better than the last time I was here." Likewise, P10 said "the team we had when I was in there, they were excellent. They worked with the cardiologist, pulmonologist and respiratory therapist, and they were all on the same page".

Another area of concern was the importance of doctors knowing their patients' medical history. The participants stressed that "It's very important because if you don't tell your doctor everything about you, he has to guess and read everything out. If you leave him in a position where he must guess, he might prescribe the wrong medicine for you" (P4). "Oh definitely, they have to know everything. I was adopted so I don't know a lot about my history. If the doctors don't tell me what's going on, I have no clue" (P7). P9 said "When I go to them, I tell them everything I know and everything I do. A little young doctor wanted to send me out, not knowing what was going on with me".

Theme 9: The Importance of Continuity of Care Before and After Discharge

The ninth theme revealed from the analysis provided insight into the role of healthcare systems in readmission. Continuity of care starts in the hospital and continues in the home or via a doctor's office or support group. COPD exacerbation is typically treated in the hospital with specific medication and therapy, and the participants reported on this process.

Some reported that the treatments and medication given in the hospital were beneficial in their recovery. Some of the participants' concern was not being able to get the same medication regiment at home to help with their COPD. For example: "I feel really good when I get my breathing treatments, and it helps with my good days" (P6). "The doctors were very good. I got some Lasix and breathing treatments to help get the water off and help with my breathing" (P8).

The participants stressed the importance of letting the doctors know everything about what was going on with their condition. They felt when the doctor knew more about them; they were able to work with other physicians and healthcare personnel better to take care of their needs. I also noticed that some of the participants were pleased with their discharge process, and some were not. Overall, effective discharge communication prepares the patients for the next step in their recovery process.

Discrepant Cases

Discrepant cases were information that was different from the most collected data. Three nonconforming cases stood out from the analysis of the data. P3 and P6 mentioned that they did not receive any education on COPD while in the hospital. Some of the unknown factors that could have contributed to this statement might have been the size and practice of the hospital or the possible diagnosis and discharge of the visit. Another nonconforming case was P3 and P7, felt that their COPD had no association with pneumonia, smoking, or occupational exposure. These discrepant cases were discussed in Chapter 5.

Summary

In Chapter 4, nine themes were identified in support of the research questions. As a result, the following were identified from the questions asked of the 10 participants. COPD exacerbation was often the case for readmission to the hospital. The data reflected that participants were aware of the signs and symptoms that prompt them to seek medical attention. The most common sign and symptom for a COPD exacerbation was shortness of breath, which can also include swelling in the lower extremities, fluid overload in the lungs, and coughing. These additional symptoms were also associated with other comorbidities like CHF and diabetes.

Moreover, participants new that other factors like occupational exposure or environmental exposure of air pollutants such as household cleaners and cigarette smoke can trigger a COPD exacerbation. Despite knowing the fact that COPD has no treatment that can cure the disease, the participants wanted more education besides the basic pamphlets and printed literature on living with COPD. Nevertheless, participants looked to healthcare providers for more personal support on the maintenance of their COPD. For instance, they can get education done at their doctor's appointment when they can make it, during their hospital stay from nurses, or before discharge. Participants felt the discharge process was an area of concern for them, especially when they had questions regarding their medication and follow-up appointments that were not answered. At the same time, participants shared some interest in the need for support groups for nutrition and wellness and exercising to help build up their activity level.

Although nine out of 10 participants stopped smoking, all participants accepted the responsibility of being involved in their care by encouraging the communication between multidisciplinary healthcare teams to provide the continuity of care during and after hospitalization. Equally, other participants educated themselves on the severity of the disease to a level that they felt comfortable sharing and teaching others living with the disease.

In Chapter 5, I will discuss interpretation, findings, limitations, recommendations for future research, implications for positive social change, and conclusion. The analysis and discussion of the themes will be concluded.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this study was to explore the lived experiences of COPD patients on factors that contributed to hospital readmission with COPD exacerbation, including education, pneumonia, smoking, occupational exposure, age, medication, and the healthcare system. In this chapter, I provide my interpretation of the findings using the phenomenological approach. Phenomenology was best suited to gain an in-depth understanding of the features of individuals' everyday experiences engaged in a common task (Creswell & Creswell, 2017).

In exploring the participants' opinions of their diagnosis, healthcare experience, barriers, and plans for a better quality of life, I identified nine themes that answered the lived experience of COPD patients' factors contributing to early 30 days hospital readmission. Within those nine themes, I was able to sum it up to three overall findings that supported the health belief model's theoretical framework, which focused on the participant's behavior change. The themes provided an excellent guide for the key results participants experienced that were fundamental to hospital readmission. The key findings of this study were: (a) education is essential to a patient's management and acceptance of COPD; (b) patients increase in knowledge helps understand the severity of the disease, recognizing signs and symptoms, and origin and triggers, and (c) patients request for COPD healthcare workers to support the continuity of care. The results of this study

could lay the foundation for formulating a health management program to help reduce readmission rates and improve the quality of life for COPD patients.

Overview of Findings

The study explored the lived experience of 10 patients living with COPD who had been readmitted to the hospital within 30 days of discharge. The data analysis indicated nine themes in response to the following research sub questions:

RQ1. What are COPD Patients' Lived Experiences of the Factors Contributing to COPD Hospital Readmission?

Theme 1: Physical signs and symptoms prior to hospital readmission

Theme 2: Other factors prior to readmission.

Theme 3: Personal factors that contributed to hospital readmission included patient's attitude towards self-care.

After so many hospitalizations, participants recognized that shortness of breath, coughing, swelling, and fluid overload were present on their admission for COPD. Not only did participants address their immediate signs and symptoms, but they also noted how other factors played a significant role in readmission such as; (a) smoking cigarettes, (b) being exposed to second hand smoke, (c) comorbidity, (d) exposure to household cleaning products, (e) occupational exposure, and even as small as not regularly attending doctor's appointments. In addition to conflicting feelings on living with COPD, some participants felt COPD was a real threat to their livelihood. While some had a different perspective on living with COPD and taking treatments, others had a positive attitude on accepting the responsibility of taking care of themselves.

RQ2. What are COPD Patients' Lived Experiences of the Role of Education in Reducing Readmission Rates?

Theme 4: Knowledge of one's own disease and how to manage it.

Theme 5: Education on living with COPD is limited and needs expanding.

Every participant was different and had different levels of knowledge of their disease and how to manage it. Just like any other illness, CHF or diabetes, education on the severity of disease was needed. Many of the participants sought educational help of doctors and other healthcare professionals like nurses and respiratory therapists on teaching them about COPD. If they felt their questions were not being addressed, they went out and did their research to help maintain their health. Likewise, participants also felt that more education should be available to them beyond brochures and other print literature when diagnosed with COPD.

RQ3. What are COPD Patients' Lived Experiences of the Role of Physical Activity in COPD Readmission?

Theme 6: Participants' understanding of the role of physical activities in self-care was very mixed.

The involvement of the participants' physical activities in self-care was mixed. While a few had physical limitations that confined them to their home, others enjoyed the small opportunities of walking outside and spending time with their family. Participants noticed how a sedentary lifestyle kept them "sick" and showed no improvement in their daily activities. They wanted to be more active, but the shortness of breath kept them confined to one area. Moreover, participants shared their definition of a "good day" and

the importance of getting involved in an exercise program as a means of defining their daily activities and hope their shortness of breath and exertion would show improvement. However, during the interviews, the participants were not aware of the functions and benefits of a pulmonary rehab program

RQ4. What are CODP Patients' Lived Experiences of the Role of the Healthcare System in Readmission?

Theme 7: The hospital discharge process from the hospital can influence readmission rate.

Theme 8: The collaboration of the medical team working together

Theme 9: The importance of continuity of care before and after discharge

The receiving of effective communication between the participants and healthcare workers before and during discharge was very important. The discharge process was a highly concerned area for participants because after leaving the hospital, it was the participants' responsibility to maintain their illness. There was a preference for doctors or nurses to explain the discharge summary, which included medications, follow up visits, and post-op care. Furthermore, the hospital discharge process was essential to the participants, but not as important as knowing that their doctor and the medical team worked together on providing continuity of care during hospital stays.

Interpretation of the Findings

All 10 participants were willing to express their experiences of living with COPD for the study. Tape-recorded interviews were conducted with each participant in the comfort of their assigned rooms. The themes that emerged from this study were like those

from the literature review in Chapter 2. I have provided interpretation of the findings within each theme.

1. What are COPD Patients' lived Experiences of the Factors Contributing to COPD Hospital Readmission?

Theme 1: Physical Signs and Symptoms Prior to Hospital Readmission

Although there was no focus on how long the participants lived with COPD, when identifying signs and symptoms that contributed to hospital readmission, participants mentioned shortness of breath, coughing, swelling, and fluid overload were the factors that prompt immediate attention. These were signs and symptoms of COPD exacerbation, which was consistent with (Negewo et al., 2015; NIH, 2020) definition of signs and symptoms of COPD, which were inability to breathe effectively, chronic cough, smoker's cough, wheezing, and coughing up excessive mucus.

The participants were over the age of 18 years and one of the problems with their COPD was shortness of breath. Although aging of the lungs mimics symptoms of COPD: shortness of breath, and excessive mucus; there was no discussion on age with my participants and what happened to their shortness of breath as they got older. Therefore, there were no findings to confirm (MacNee et al., 2014; 2016), who stated that aging could be associated with the progressive degeneration of tissues, which hurts the structure and function of human organs, a known risk factor for chronic diseases like COPD. Overall, participants felt that identifying their signs and symptoms was very important when providing information to a nurse or physician before possible hospitalization.

Theme 2: Other Factors Prior to Readmission

The participants in this study attributed their COPD to smoking, occupational exposure, or secondhand smoke. Two of the participants, P3 and P7, never smoked, but developed COPD. In their interviews, they mentioned exposure to secondhand smoking. This finding Patel, Trumph, Bodas, and Vij (2017) on smoking and exposure to secondhand tobacco smoke was the prime risk factors for developing chronic lung disease such as COPD. On the other hand, participants who had a history of tobacco usage knew it was their COPD source, and one of the triggers that prompted readmission until they decided to quit. They quickly identified how stopping smoking help decreased their readmission to the hospital.

Not only did participants have a history of smoking or secondhand exposure, four participants (P4, P6, P10, P2) had some form of occupational exposure in their past or exposure that can be classified as a trigger. The different occupational exposure types were to asbestos, cleaning chemicals, and war chemicals like Agent Orange. The study findings supported Paulin et al. (2015) with occupational exposure has been implicated in COPD causation in populations with concurrent smoking, while systematic reviews estimated that 15% of COPD occurrences might be attributable to workplace exposure to vapors, gases, dust, and fumes. Occupational exposure to household cleaning products was also mentioned as a trigger for P2 in the interview.

Theme 3: Personal Factors that Contributed to Hospital Readmission Included Patient's Attitude Towards Self Care

Emotional symptoms related to readmission were also reported. When asked how they felt about having no treatment that can cure COPD, several participants were sad or unfortunate because cancer treatments can lead to remission, but not for COPD. With the HBM, the participants' perceived susceptibility was based on the individual's belief in the severity of COPD, and the perceived severity of having COPD and as a disease that has no cure. The finding supported the literature Sheeran and Abraham (1996) and Horrell et al. (2020) which shows that risk perception is founded on two fundamental beliefs - perceived susceptibility to the illness and anticipated severity of the consequences of the disease.

Participants' risk perception of hospital readmission resulted from their behavior with smoking. Although nine out of the 10 participants stopped smoking, it happened with a healthcare professional's support. Other influential patterns, such as not following up with a doctor's appointment, increased readmission chances. As such, participants stressed the need for assistance with self-management from a healthcare professional. This finding was consistent with Jonsdottir (2013), who conceptualized self-management as health care professional centered more than patient centered, and Baker & Fatoye (2017) supported the need for interaction between patients and healthcare professionals.

2. What are COPD Patients' Lived Experiences of the Role of Education in Reducing Readmission Rates?

Theme 4: Knowledge of one's own Disease and how to Manage it may Help Prevent Readmission

Besides, participants' level of knowledge varied with the disease and how to manage it. Some participants received information from doctors but expressed the need to do their research on COPD to maintain their health. Furthermore, participants who smoked knew that cigarette smoking caused their COPD, so they decided to stop. Participants' behavior on knowing what causes a COPD exacerbation was influential to the progression of their illness. This finding supported Kasikci (2011) and Selzler et al. (2020) on the two types of expectations that influenced behaviors: (a) outcome expectations, which refer to the conviction that particular behavior will lead to an inevitable outcome, and (b) self-efficacy expectations, which is an individual's judgment of his or her confidence in carrying out a particular action. Some participants struggle with being compliant, so they spoke of obtaining additional education from their doctor or the internet. However, there was no mention of families and the communities coming together to enhance health care.

Theme 5: Education on Living with COPD is Limited and Needs Expanding

In this sample, newly diagnosed participants felt it was the physician's responsibility to explain what COPD was and maintain it; most did not realize there was much more to learn than what was initially revealed to them as the disease progressed. Not only did they want to know more about the condition, but they were also hoping for more time to discuss an individual health plan at their doctor's follow up appointments. The findings supported Partridge (2012), who found that COPD patients only saw their doctor roughly every 13.4 months for approximately 12 minutes each time for their follow-up appointments. Poureslami et al. (2020) also found that patients' doctor visits

were short and there was a waiting time for an appointment. Both participants and the results from Partridge and Poureslami et al. wanted more education at their doctor's appointment because it was not enough time to get a full comprehensive review of COPD and manage it. There was no mention of how much time should be allotted to education, but they felt it should be more than just brochures and literature to prevent readmission.

Similarly, participants relied on the hospital to obtain information on the disease from the nurses, respiratory therapists, and physicians. This line of healthcare providers was typical in the care of COPD patients. When asked about each healthcare worker's role, participants did not mention the heavy involvement of the respiratory therapist in their COPD education. Therefore, the findings did not confirm (Ray, 2012; Silver et al., 2017) inclusion of a respiratory therapists with advanced cardiopulmonary training for individualized COPD patient training based on their health literacy level.

Participants from this study felt education should begin in the hospital before discharge and continue through their follow-up appointments. They mentioned receiving education on smoking during their hospital stay and setting up follow up visits to discuss smoking side effects with COPD. It is widely recognized that healthcare workers often educate patients about smoking, whether they have a history of COPD, CHF, or diabetes. Smoking cessation was one of the most common education topic participants received during their hospital stay. Waters et al. (2016) confirmed that healthcare workers often educated patients on how cigarette smoking can cause a wide range of conditions and long-term health problems like COPD. Unfortunately, one participant said no healthcare professional ever spoke to her about COPD while hospitalized. Her education came from

the doctor's office when she went for her follow up appointment. As I identified the factors contributing to hospital readmission, I also looked at the participants' physical capabilities with COPD.

3. What are COPD Patients' Lived Experiences of the Role of Physical Activity in COPD Readmission?

Theme 6: Participants' Understanding of the Role of Physical Activities in Self-care was Very Mixed.

The definition behind the role of physical activity in self-care amongst participants was decidedly mixed. P2 relayed being active as a "good day" because he was able to: (a) get out of bed and move around without assistance, and (b) interact with other people at his facility. Likewise, P9 described her good day as relaxing with a glass of tea on the porch and laughing, talking, and walking with her granddaughters. Both participants' explanations of physical activities with COPD varied. The events described by these two participants were things a healthy individual can do daily. The findings were consistent with (Miravitlles et al., 2014; Matkovic, 2020) on the physical activity being significantly reduced in COPD patients than healthy individuals of the same age group. It was also different from patient to patient.

Participants explained their comfort level of physical activity with living with COPD. Their livelihood consisted of knowing how this disease dictated their everyday actions, like walking up the stairs, going shopping, or even moving around in one's home that an average person may take for granted. This finding was consistent with Wheaton, Cunningham, Ford, and Croft (2015) who found that adults in the United States with

COPD were more likely than those without COPD to be unable to work, have activity limitation, have difficulty walking or climbing stairs, or using specialized equipment. Living with these limitations prompted participants to seek support from doctors, skilled nursing facilities, and physical therapy programs. P2 said, “When I came to the nursing home, I got better versus when I went home, I was not getting any better”. P6 couldn’t exercise because one of her comorbidities affected her legs’ muscles that required her to participate in a physical therapy program for eight weeks. The finding was consistent with McCarthy et al. (2015) and Welch (2016) on that pulmonary rehabilitation is a low-cost intervention delivered by healthcare professionals that serve as a form of exercise, but is an important component in the management of COPD on improving health related quality of life and exercise capacity. However, none of the participants knew about the pulmonary rehab program designed to assist in improving COPD patients’ exercise tolerance.

Part of pulmonary rehabilitation is to assist individuals with COPD by increasing their physical tolerance to do more daily activities, promote long term adherence to health-enhancing behaviors, and improve their self-efficacy. There were no findings of participants using a pulmonary rehab facility to assist with their daily activities. Therefore, it was not consistent with (MacNee et al., 2014; 2016) who found that COPD patients who participated in exercise training improves muscle function and mass, which contributes to a better quality of life and a reduction in the risk of exacerbations hospitalization.

4. What are CODP Patients' Lived Experiences of the Role of the Healthcare System in Readmission?

Theme 7: The Hospital Discharge Process From the Hospital can Influence Readmission Rate

Participants preferred to have their discharge summary discussed in detail, regardless of whether they were going to an SNF or home. There were some noticeable variances on the discharge process to the home patient versus hospital to SNF patient. For example, P2 mentioned how the discharge information was given to the SNF's transportation people and never discussed with him or his wife. On the contrary, patients discharged from the hospital to home got a one on one discussion of their discharge summary. P6 described how her discharge process allowed her to ask questions and review her medications and follow up doctor appointments. In my study, two different findings were not consistent with how Prusaczyk et al. (2019) discharge process prevents readmission when the focus is on the coordination and communication between interprofessional team members in and outside the hospital with patients and their caregivers. However, participants felt this communication process would assist in their early readmission

It was important for patients to discuss what medications to take, schedule doctors' appointments, and discuss their disease treatment. The participants mentioned how talking through the discharge summary made a difference in how they should proceed when faced with COPD's flare ups. The findings did not confirm the literature from Hammel et al. (2016) on identifying the gaps in care quality and utilizing the

Chronic Pulmonary Disease Clinical Specialist-RT plan to help with the discharge process. However, the process that the participants did seek was in line with what this plan had to offer. This plan showed how to transition from the hospital to the home by providing daily coaching before and during discharge on equipment usage, medications, therapy, following up with physicians, DME providers, and making phone calls to patients 24-48 hours. Further investigation on the usage the Chronic Pulmonary Disease Clinical Specialist-RT plan should be reviewed.

Theme 8: The Collaboration of the Medical Team Working Together

Along the communication lines, participants shared the importance of collaboration amongst the medical team (doctors, nurses, and respiratory therapists) on providing the best care for them while in the hospital. For example, P9 mentioned how the team worked together during her recent hospital stay instead of the last time she was admitted. And P10 said, “The team I had when I was hospitalized was excellent. They worked with the cardiologist, pulmonologist, and respiratory therapist, to get me discharged”.

The findings were structured around the medical team’s collaboration working together to provide the best care for the patient. This finding was not consistent with the literature by Roberts et al. (2016), who conducted a retrospective analysis revealing how the inadequacy of the hospital system readmission programs and software used to determine pre index variables like pneumonia, drug therapy, prior hospitalization, and comorbidities, can be missed and can contribute to early readmission. If the medical team

does not have access to an effective system program and software, it can be challenging to work on the same patient with different specialties.

Furthermore, the healthcare system consists of healthcare personnel, hospitals, physician offices, and medical software programs; it includes policy and procedures and healthcare models that navigate the communication between healthcare workers and patients. My study was not extended to healthcare workers for their opinion on the pros and cons of readmission software programs to assist in the communication between physicians and patients when reviewing the medical history for any predictors for readmission.

Theme 9: The Importance of Continuity of Care Before and After Discharge

Participants mentioned how the treatments and medication given in the hospital was very helpful in their recovery process. Some of the mentioned treatments were "breathing treatment" by the respiratory therapists and steroids provided by the nurses. These treatments were ordered by the physician to alleviate the symptoms of COPD exacerbation. This finding was consistent with Clarke, Lundy, and McGarvey (2015) describing a list of treatments used in COPD exacerbation that included anti-inflammatory therapies, bronchodilators (breathing treatments), and inhaled corticosteroids.

The participants felt it was essential to continue the same regiment of treatments given in the hospital when they were at home. Participants felt the continuity of the care before and after discharge could help reduce their readmission rate. However, there was some concern about not paying for the medication when they were discharged to home.

This finding was consistent with Schroff et al. (2017) on pharmacologic treatments associated with improved dyspnea but linked to unaffordable cost for patients. Further research is needed on financial assistance for medication.

Limitations of the study

One limitation was that participants were in a recovery stage from the previous hospitalization or within days of admission to the hospital during the interviews. The recovery stage might have limited their memory on the answers to the study questions. According to Trochim (2020), credibility focuses on confidence in the findings' truth, including an accurate understanding of the context received from the interviewee.

Another limitation was my decision to interview the population of recovery SNF patients and actively sick COPD patients instead of participants from a pulmonary office who were undergoing maintenance treatments with a physician. This population would have provided an overview of the current care received from their doctor and its effect on their readmission rate today.

Recommendations for COPD Education and Support

The results of this study suggest a need for continuous education and support for patients living with COPD, starting from: (a) the initial hospital admission, (b) to the discharge process, (c) follow-up doctors' appointments, and (d) COPD support groups. Education on living with COPD and how to prevent readmission should begin with a team approach. The team could include a respiratory therapist, nurses, and doctors in the hospital, and carry through to the discharge process and post acute care. In addition to pamphlets, one on one discussions on individual plans should be started with the patient

and caregiver during the hospital stay. At discharge, the plans for continuous care would follow through with the patient and caregiver to identify signs and symptoms, medications frequency, and follow-up appointments. When patients attend their first doctors' appointment, the support should be reevaluated with the doctor reviewing the discharge summary and setting up quarterly appointments to recommend support groups to encourage exercise and nutrition.

Recommendations for Future Research

More research is needed on developed disease management programs to determine how effective they are in reducing COPD readmission. The study should include the different programs created for hospitals, doctor's offices, and community healthcare clinics. And what benefits of pulmonary rehabilitation can apply to readmission of COPD patients. Participants also spoke about exercise programs to assist with their daily activities and shortness of breath. As mentioned in the findings, participants did not know about the benefits of a pulmonary rehabilitation program.

Further research is needed on a group of patients attending the pulmonary rehab program on their readmission rates. Furthermore, age was a factor in developing COPD too. As people age, the literature states the body becomes susceptible to developing multiple conditions and low-grade systemic inflammation, which relates to diseases like COPD (Negewo et al., 2015). I did not address the age factor in this study. Perhaps a focus group targeting a specific age group can be future research for another researcher.

Implications for Social Change

This study's results could bring a positive social change to the different physician offices, hospitals, and skilled nursing facilities that provide care to COPD patients starting in the state of Georgia. My goal is to use the themes derived from the study to develop a health management program in conjunction with the case management department to reduce COPD patients' readmission for the hospital that participated in the study. The ending results would help keep COPD patients out of the hospital and increase their knowledge of maintaining their disease.

The findings suggested the importance of continuous education in an individual plan that identifies signs and symptoms, improves nutrition and medication benefits, and promotes overall health and fitness development. Health management programs should be directed to the individual's needs, so there is a higher chance of achieving it.

Conclusion

In conclusion, the study focused on the participant's lived experiences of living with COPD and identifying factors contributing to hospital readmission. One of the critical elements of the management of COPD readmission was education. Participants were knowledgeable of their signs and symptoms. Still, they needed the support and education to differentiate the symptoms between COPD or flares up for other comorbidities like CHF and diabetes. With some participants having multiple comorbidities, it was essential to maintain open communication with their doctors on past and current medical history and participation in other factors like smoking, which may cause delays in treatments.

The education focused on the patients, but it was also a concern of how the teaching collaborated between the healthcare workers providing care for COPD patients. The healthcare system included hospitals, physicians, nurses, and respiratory therapists. Indeed it was essential for participants to receive education in the hospital, but it was also equally important to maintain continual support on the disease after discharge. The discharge process appeared to be the connector between whether or not the patient returns within 30 days. The discharge was the time to educate and answer questions and concerns of the discharge summary with the participant and caregiver about medication, follow up appointments, and plans for continuity of care. Proper education and direction during the discharge process can eliminate the uncertainty of the patients and family concerns.

Overall, participants wanted to be educated with an individual plan to live with COPD and prevent hospital readmission. Coaching of the fundamental of hospital readmission prevention was a method that can be done in the hospital, during discharge, or at the doctors' office during scheduled appointments. Personal communication between the healthcare provider and patient on the fundamentals of their disease is the key to providing quality care that ensures the patients' safety and well-being.

The findings of this study, though limited, could serve as a basis for a healthcare management program to assist in decreasing COPD patients' readmission. For such a program to be effective, it would need to help patients (a) acknowledge their disease, (b) know its origins, (c) manage its triggers, (d) adhere to the treatments, and (e) increase the personal communication between the patient and provider. This combination of

innovations could be the foundation for preventing hospital readmission and improving COPD patients' quality of life.

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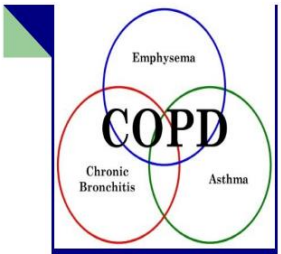
Appendix A: Flyer

Research Study Recruitment for COPD

Invitation to participate in a study

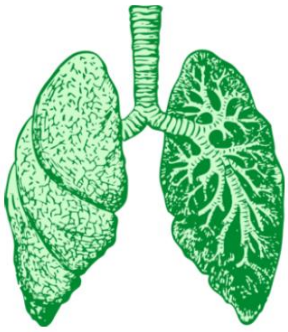


Target Population

- Diagnosis of COPD
- hospitalized twice within 30 days?
- Willing to share your opinions and experiences on COPD

Recruiting participants for a Walden University dissertation research study in Health Sciences on: "Identifying factors contributing to hospital readmissions of COPD patients"

Age requirement: 18 years or older
Compensation: $5 gift card



Contact Information
Marcia Hector, Researcher
7062-482-4293
Marcia.jeffers@waldenu.edu

This study is not affiliated with the physicians or staff of Walton Pulmonary & Sleep Medicine

Appendix B: Interview Guide

This interview is about the reasons why people with COPD get readmitted to the hospital. Thanks for agreeing to take part. The information you give me will be kept confidential and only used to help develop a readmission program for local hospitals, community clinics, and physician offices. Shall we begin?

1. How would you describe your level of knowledge concerning COPD?
2. How serious of a threat to your life do you believe COPD is?
3. On a scale from 1 to 10, please score your overall health before your first hospitalization of COPD exacerbation, and now?
4. On a scale from 1 to 10, please score your overall health now.
5. Please explain any difference between then and now.
6. Tell me about your signs and symptoms before an acute episode of COPD.
7. How many times have you been hospitalized within the past year for COPD?
8. Please describe factors that have influenced your hospitalization within 30 days of previously being admitted.
9. Pneumonia, smoking, and occupational exposure are some of the factors that associated with COPD. Please describe any experience you've had with any of these factors.
10. After your last hospitalization, did anything change in your attitude towards your COPD?
11. If yes, please describe. If no continue to Q12
12. After your last hospitalization, what have you done to help reduce the chance of your readmission?

Education

13. Please describe any education you received in the hospital about how to prevent readmission. If none, move to Q15

14. Did you feel like you could do the things they recommended?

15. If there was no education about how to avoid readmission, do you feel there should be?

16. If yes, what content should be in the program?

17. In what ways do you feel you are responsible for treatment of your COPD?

18. Is there a person or program that might be helpful in your daily self-care?

19. Was there anything you would have done differently to prevent your illness?

20. Describe a typical day for you when you are considered “at your best.”

21. Describe anything in your typical day that might contribute to a COPD “flare-up.”

22. They say that COPD is a disease that has no cure, how do you feel about that?

23. If you could educate others about living with COPD, what would you tell them?

Physical Activity

24. What is your experience between being physically active and breathing?
25. What would you say are the benefits of staying physically active?
26. Has your PCP provided you with information on the importance of staying physically active?
27. If yes, describe some of that information. If no, go to next question
28. What type of education would help you to become even more physically active?
29. Is there anything preventing you from staying active?

30. How important is it to have your medical history available to your doctors?

31. During your stay, how was your care team (nurses, doctors, and respiratory therapists) involved in your care?

32. During your second admission within the 30 days, were you treated by the same care team?

33. Can you describe the difference between both visits? For example, medications, LOS, nurses, doctors, and respiratory therapists.

34. Before your discharge, can you describe the process about your medications, discharge summary, and follow-up appointments?

35. Would you be willing to read a transcription of the interview and discuss it with me?

Thanks for your time.

I will send you a copy of conversation for your review via your choice of mail or email. If there is anything you would like to address, you would have five days upon receiving the information to get back with me with clarifications. In conclusion, I am rewarding you with a $5 gift card for your participation.

Mail_____

Email_____