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Readmissions and Death Rates in Patients with Chronic Obstructive Pulmonary Disease at Veterans Affairs Medical Centers

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
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Abstract

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MA/MS, Walden University, 2018

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Doctoral Study Submitted in Partial Fulfillment

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Abstract

Readmissions and death rates can serve as indicators of performance in healthcare organizations and can reflect a lapse in staff performance particularly for patients with chronic obstructive pulmonary disease (COPD). The purpose of this quasi-experimental quantitative study was to determine the extent to which readmissions and death rates within 30 days of discharge for patients with COPD at selected Veterans Affairs (VA) medical centers, differed between 2015 and 2018. The transitions theory served as the theoretical framework for this study. The research questions evaluated readmissions and death rates for patients with the chronic obstructive pulmonary disease at VA medical centers between 2015 and 2018. The Veteran's Health Administration Readmissions and Deaths COPD data for 2015–2018 were analyzed. The data set captured information from 171 VA medical centers. A one-way ANOVA test was used to analyze data. The results regarding the readmissions and mortality rates within 30 days of discharge showed statistically significant differences in readmission rates for the years 2015–2018 ($p < .05$) and death rates for the years 2015–2018 ($p < .011$). The findings of this study may help improve patient outcomes by identifying trends in readmission rates for COPD patients in VA medical centers. The identification of the need for changes in healthcare delivery could lead to a reduction in readmissions and patient deaths. The positive social change implication for this study could include a healthcare delivery approach that can be incorporated at other healthcare facilities with a degree of consistency in operations that can benefit both the facility and the patients.

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Section 1: Foundation of the Study and Literature Review

Readmissions can occur because of complications experienced after a patient has been discharged from a hospital (Donaghy et al., 2018). Per CMS standards, cases of readmissions within 30 days are noted, which may denote negligence while discharging patients and reflect a gap in healthcare delivery (Gillespie & Reader, 2018). Readmissions also cause a patient to incur extra costs for healthcare. The opportunity to improve medical care for Chronic Obstructive Pulmonary Disease (COPD) could promote positive social change in communities in healthcare delivery. This section describes the problem statement, background, significance, purpose, nature of the study, research questions, assumptions, and limitations for this study in relation to the evaluation of death rates and readmissions rates for patients in Veterans Affairs (VA) medical centers.

Problem Statement

Healthcare organizations should strive to capture the needs of clients well to reduce cases of readmissions and death rates, as these indicate performance in healthcare organizations (Roberts et al., 2018). Healthcare in a hospital is not limited to only the administration of care but also to ensuring that healthcare services are delivered with a degree of efficiency. Improved operational efficiency in healthcare institutions may reduce rates of readmissions and deaths for patients with COPD (Catena et al., 2020). To address the gap in healthcare delivery, this research was focused on readmissions and death rates among patients with COPD in VA medical centers. Highlights of healthcare delivery in the facility constitute the consideration of readmissions within 30 days after

discharge (Paci et al., 2017). These facilities have recorded changes in the number of patients because of performance and manageable cases of readmissions and death rates. Reduction of readmission rates and death rates in VA medical centers can signify better service delivery in healthcare compared to the established rates of readmissions in other centers across the country.

Operations within the VA medical centers denote that VA medical centers have the potential for healthcare improvements (Carter et al., 2019). Changes in the provision of healthcare needs are significant, especially when the facility can accommodate more healthcare procedures. Any improvement in operational model within the VA healthcare system can change healthcare delivery. Ideas upheld by administration and staff are embedded in admission procedures across VA medical centers (Sullivan et al., 2018). A specific manner of addressing the causes of readmissions is through the involvement of staff in the affairs of the facility. All staff in the facility can play a part as a united effort geared toward a reduction of hospital readmissions in VA medical centers.

Purpose of the Study

The purpose of this quantitative study was to determine the extent to which readmissions and death rates within 30 days of discharge for patients with COPD at selected VA medical centers differ between 2015 and 2018. The element of readmission and death rates at VA medical centers were key measures in the healthcare delivery as well as the growth of the organization. The dependent variables were rates of readmissions and death rates. The independent variable was change across the years.

Research Questions and Hypotheses

RQ 1: To what extent do readmission rates within 30 days of discharge for patients with chronic obstructive pulmonary disease at VA medical centers differ for the period between 2015 and 2018?

$H_0$1: Readmission rates within 30 days of discharge for patients with chronic obstructive pulmonary disease at VA medical centers do not differ for the period between 2015 and 2018.

$H_1$1: Readmission rates within 30 days of discharge for patients with chronic obstructive pulmonary disease at VA medical centers significantly differ for the period between 2015 and 2018.

RQ 2: Is there a difference in death rates within 30 days of discharge for patients with chronic obstructive pulmonary disease at VA medical centers for the period between 2015 and 2018?

$H_0$2 There is no difference in death rates within 30 days of discharge for patients with chronic obstructive pulmonary disease at VA medical centers for the period between 2015 and 2018.

$H_1$2: There is a difference in death rates within 30 days of discharge for patients with chronic obstructive pulmonary disease at VA medical centers for the period between 2015 and 2018.

Theoretical Foundation for the Study

The research was conducted to determine readmission and death rates for COPD patients and incorporated the transitions theory. Transitions theory is a theory developed

by Schlossberg (1981) and could help explain readmissions and death rates for COPD patients. Transitions theory delves into the changes upon which the effects realized by the disease can be mitigated. Transitions theory could explain the differentiated outcome in medical outcomes in different medical centers, as the continued prevalence of fatalities arising due to COPD is affected by the location of the VA medical centers. A balancing of ideas offers research credibility, as the outcomes from the research can have a potential positive result on healthcare needs. The research conducted ties to actions taken to identify the changes in readmissions and death rates.

Nature of the Study

A quasi-experimental quantitative design was used for the research. The analysis was based on an existing dataset to report on the operations of the organization. Data from patients with chronic obstructive pulmonary disease at VA medical centers were used for the period between 2015 to 2018. The rationale for choosing this period was that it provided enough data to tabulate cases of readmissions and mortalities in VA medical centers with accuracy. The secondary dataset that was used for the study was the VA medical centers' readmissions and deaths COPD dataset.

The secondary dataset that was used for this study includes a record of readmissions and mortalities at VA medical centers. The study focused on data related to the rates of readmissions and death rates at VA medical centers. Readmission rates were measured by capturing the number of days stipulated by the CMS, which is the healthcare standard for patients as they are readmitted into the facility for diagnosis and which should to be addressed before discharge (Edgerton et al., 2018). In the study, dependent

variables were rates of readmissions and death rates.

Literature Search Strategy

Walden University Library was used to search for relevant literature. The years researched were between 2016 and 2019. The following search engines specifically detailing academic records were used for the literature search: Google Scholar, Microsoft Academic Search, Virtual LRC, Refseek, Academic Info, and iSeek. Other pertinent databases/programs included The Centers for Medicare and Medicaid Services (CMS), the Patient Protection and Affordable Care Act (PPACA), Centers for Disease Control (CDC), Hospital Readmission Reduction Program, Community Based Care Transition Program, Independence at Home Demonstration Program (IAH), and Bundled Payments for Care Improvement Initiative. Only full text and peer-reviewed articles were used for the literature review.

The research involved gathering data on cases of cases of readmissions and mortality rates. The keywords used covered the main concept of readmission cases and causes in healthcare facilities. The research key terms do not include VA medical centers. The research data and samples taken from the various VA medical centers serve as the primary information that will be used to investigate the gap in the study in relation to COPD patients. Keywords tackled in the research seeks to capture the big picture and trends of COPD and thus augment the claim recognized by analyzing the VA dataset used. The keywords chosen were to help develop a meaning for data at hand. The research used the following keywords: *readmissions*, *readmission rates*, *death*, *death rates*, *hospital*, *chronic obstructive pulmonary disease (COPD)*, *death rates among*

patients, *death rates and readmission rates*, *measures to reduce death and readmission rates*, *healthcare in the US*, *healthcare in the US as compared to other countries in the world*, *healthcare improvement as compared to healthcare efficiency*, *healthcare improvement measures*, *efficiency in healthcare*, *changes in healthcare programs*, *recent measures employed in healthcare organizations*, *essential elements in guiding the improvement of healthcare index admission*, *30-day readmissions*, *90-day readmissions*, *1-year readmissions*, and *hospital discharge*.

The maximum number of reviewed articles was 10 to determine that the information gathered conclusively captured the research. Some research keywords only took five articles. Narrowing down the items was done based on the clarity of the information and how specific the information contained in the reports was. Information in most of the articles captured the topic in a diversified manner.

Literature Review

COPD

COPD is a disease that affects the breathing system in human beings. COPD blocks the lungs, jeopardizing a patients' life. COPD includes chronic bronchitis and emphysema (Boukhenouna et al., 2018). Patients with the advanced COPD are obliged to undergo pharmacologic therapy, which improves lung function and makes the patients stable (Lipson et al., 2017). Risk factors for COPD include smoking, air pollution, childhood chronic cough, and a history of respiratory illnesses in households (Wang et al., 2018). Research stipulates that the main cause of COPD is the smoking of cigarettes (Liu et al., 2019). Exposure to smoke is not only limited to cigarettes but any exposure

that captures the quantity detailed for the blockage of the lungs. Fuels may cause one to have an accumulation of soot in their lungs, which will make the person degrade and cause obstruction in the lungs (Nirajan & Thakur, 2017). In the case scenario of a degenerated disease, the patient will experience challenges with breathing and will eventually lose their life as the disease progresses. COPD has led to the death of 3.5–4 million people every year (Ladner et al., 2020).

Readmissions and Death Rates in COPD

The occurrence of COPD, alongside changes in healthcare protocols, provides an opportunity for managing the disease to help in the protection of human lives. Monitoring readmission patterns, especially for patients with comorbid conditions, can lead to a decrease in post-discharge mortality (Harti et al., 2016). The management and control of pneumonia (PN), acute myocardial heart infarction (AMI), and heart failure could be examined to gather the information related to readmissions (Sarkar, 2020). Socioeconomic elements of the administration of healthcare can also play a significant role in determining the development of immunity in patients (Gershon et al., 2019).

The examination and evaluation of readmissions within 30 days is a valid parameter of evaluating the healthcare program at VA medical centers (Sing et al., 2016). Other researchers have suggested considering 90 days of exacerbations of healthcare readmissions (Echevarria et al., 2017). After the indexed admission period is exhausted, and a patient is discharged, the period before the patient is readmitted back to the healthcare organization should be examined. Ideally, the standard period for readmissions is 30 days after discharge (Carter et al., 2018), but the information derived from

readmissions taking place after longer periods will help identify the recurrence of medical needs in healthcare organizations.

Operational Effectiveness in Healthcare Institutions

The need for healthcare improvement is not limited to VA medical centers (Navachi & Lockwood, 2020). Different healthcare organizations experience different challenges, and their ways and means of tackling them differ significantly. Readmissions, as well as death rates, are a measure of healthcare organizations' ability to control illnesses. Hospital administration should recognize the changes that take place in the provision of healthcare (Bao et al., 2019). A graph could be used to explain whether the organization has implemented successful measures to reduce hospital readmissions. A flattening graph of readmissions and mortality within 30 days could mean that the organization is appropriately attending to healthcare services and that the prevalence of healthcare delivery is held at a positive margin of improvement.

Growth in Healthcare

The different growth elements in healthcare, with a significant mention of mechanisms employed to reduce both death rates and readmission rates, should be studied. Healthcare growth is diverse, and a surge in the number of patients visiting the healthcare organization can bring into context a different notion of an increase in healthcare needs (TariVerdi et al., 2019). Ideally, as an organization establishes itself in the providence of a particular service, the number of patients who have had the condition could increase within the organization. A recognition of this surge in patients should be studied and analyzed since the statistics deployed are not the accurate measure of the

healthcare organization's operational effectiveness under study.

Trends in Healthcare

The surge in the number of patients visiting a healthcare organization can be examined by analyzing the trends in healthcare. Additionally, the quality of healthcare delivery measures must be retained in the facility (Adirim et al., 2017), and thus existing measures of efficiency should be encouraged. The facility could expose itself to the challenge of execution of healthcare needs, which, when effectively handled, will be an opportunity for the facility to expand its operations.

Increasing cases of variations in healthcare exist where healthcare practitioners demonstrate concern in healthcare administration measures (Walley et al., 2019). Changes in trends in healthcare cannot be ignored. These changes are the persistent and unchangeable derivatives adopted in healthcare delivery. An example of a trend in healthcare delivery was the AIDS pandemic. From those years, it became a norm for healthcare organizations never to share syringes among patients. The same attributes are recognizable in the prevailing world crisis of COVID 19 (Tan et al., 2020). In future, it is likely that it will be a norm that a healthcare facility must have its staff use masks at work and screen patients promptly. These are changes that leverage how healthcare is administered but are necessary for a changing world. Changes in the world are essential for the administration of care. For this reason, it is an unacceptable notion for a healthcare organization to forsake safety measures when delivering healthcare (Gutberg & Berta, 2017). Healthcare is compassionate, and since medical centers exist to provide the best for medical needs, it will be necessary to convey the relevant information and

capture healthcare trends essential to avoid future incontinences orchestrated by negligence.

Funding for Healthcare

Medicare and Medicaid stand out as the two primary and well-recognized organizations which deal with the provision of medical insurance. Medical insurance is a priority when exploring the domain of healthcare funding, as a health insurance plan takes away the uncertainty encountered in tackling health issues. Unfortunately, some patients are unable to seek medication on the grounds of financial ability (Wong et al., 2018). In the US, Medicare and Medicaid have sought to eliminate these loopholes. These insurance plans are backed by the government and cater to the elderly and those underprivileged to receive healthcare. In retrospect, though, Medicare and Medicaid are not the ultimate solutions to the funding of healthcare needs. Health insurance, which guarantees patients that they will be attended to when they fall ill, is necessary for funding healthcare. The measures required to undertake health insurance are mostly related to recognizing the patients' need for healthcare funding (Stopka et al., 2017).

Derivation of Increasing Concern of Healthcare Situations for Citizens

If citizens seek medical attention in time, medical practitioners can better capture medical conditions and take the necessary steps to provide the appropriate procedures and treatments. Healthcare awareness is an element of healthcare neglected by most patients (Alaiad & Zhou, 2017). These patients may assume that only physicians are responsible for their healthcare needs. These are incorrect perspectives since the patients themselves can prevent dire consequences by employing health awareness measures.

Medication administered on time reduces the cost of healthcare, increases the chances of recovery, and avoids death (Dalton & Byrne, 2017). It is essential, therefore, that citizens are led to understand the significance of health awareness. The greatest attribute of health awareness is that a patient will exhibit health awareness and position themselves to reduce dire consequences that may lead to death, but which will effectively reduce death rates when addressed in a timely manner.

A keen examination of trends in healthcare provision and the availability of funding was studied to detail the healthcare needs and perception of communities. The results revealed researchers left out vital information which contributed to a detailed categorization of trends in healthcare provision (Filkins et al., 2016). The dissemination and categorization of the information were based on the attitudes and attributes related to healthcare improvement schemes concerning the needs of the organization. Adoptions by the researchers were the ability to capture the needs of the healthcare organization. A detailed evaluation of trends in healthcare funding was not only diverse but also necessary as a benchmark upon which perceptions of healthcare delivery and funding could be realized (Choi et al., 2018). Ideally, gathering information formed a measure of examining the needs of healthcare organizations and bringing them together. Trends of COPD in patients were some of the detailed evaluations of research to deduce significant portions of healthcare needs. These included identification of healthcare details, among which were readmission rates, death rates, and the actions of physicians to work on the awareness of health improvement stance (Watt et al., 2019).

Studies Related to the Research Questions

The literature highlights the attributes of readmissions and death rates and demonstrates that readmissions and mortalities are common elements in healthcare entities (Weatherspoon, 2018). Increased improvements in hospital readmissions were tied to a study of the organization as a whole and checking of specific measures employed in these organizations. A correlational study gave a comparison between different parameters used in research (Liu et al., 2016). The research was based upon analyzing content and a comparative recognition of the different ways in which information from different sources is related, and with the evaluation, one could get to a consensus on the reality medical cases related to COPD. The research sought to capture the impact of COPD in patients by analyzing readmissions rates within the medically accepted 30-day period for COPD patients at VA medical centers. The research also evaluated death rates for patients at VA medical centers. The information derived also highlighted avenues through which COPD could be managed. Case studies, especially conducted around the subject of COPD, were an avenue to recognize the different ways to manage the prevalence of COPD and its impacts among communities (Nikolaou et al., 2020).

Geographic Location of Medical Centers

Readmission and mortality rates can be influenced by the geographic location of a medical center. The location of a medical facility affects the quality of care given, and thus contributes either to an increase or a decrease in readmission and mortality rates in the different care centers. In the article by Shin et al. (2022), the location of a medical

center contributes to the rates of readmissions and mortality rates. The article explores the readmission rates and mortality rates for a medical facility located on the border between US and Mexico and captures a positive correlation between readmission and mortality rates based on geographic location. Medical facilities located near the border have higher readmission and mortality rates as compared to facilities whose location is far from the border. Witrick et al. (2022) explore the case for readmission and mortality rates in medical centers for patients suffering from peripheral artery disease (PAD). The location of a medical care facility stands out as a significant part in influencing readmission and mortality rates in the healthcare facility. The geographic location of a medical center therefore can influence cases of readmissions and mortality rates.

Definitions

COPD: Chronic Obstructive Pulmonary Disease. A medical condition where a patient finds it difficult to control their breathing (Harb et al., 2017).

Death rate: A comparison of the number of patients who have succumbed to COPD as compared to the total population of sick patients. This is a dependent variable (Gerayeli et al., 2021).

Readmissions: The situation where a patient is referred to a healthcare facility in a specified duration after they have been treated and discharged for a specific condition (Li et al., 2021).

Readmission rates – the number of patients who are admitted back at VA due to COPD as compared to the total number of COPD discharged within the month. This is a dependent variable (Kong & Wilkinson, 2020).

30 days of discharge – The period over which the readmissions and death rates will be observed after patient has been discharged from a medical center (Wadhera et al., 2018).

Assumptions

The first assumption taken into consideration was that a patient would not be reinfected with the same condition over thirty days after discharge. Patients can contract an illness, or develop a condition, a few days after treatment, which is independent of the medication they received. The other assumption was that the healthcare facility has treated, managed, stabilized, and/or eliminated a condition or illness, at the time of discharge. There are instances where patients are discharged when they have not fully recovered. The healthcare facility assumes all patients are hundred percent recovered at discharge. The assumptions were necessary to have a balanced opinion on the recurrence of an illness within the period given.

Scope and Delimitations

The study focused on the readmissions and death rates for COPD patients. Since the research integrates itself with other medical conditions such as accidents and cancer, the research focus weighed on the influence of COPD. Readmissions highly indicate failure in the dissemination of care procedures. I chose to focus on COPD, as this focus could allow me to evaluate the reasons for patients succumbing to COPD after receiving medication. Healthcare conditions are usually integrated, and other health conditions can either impact the effects of COPD or can be affected by COPD.

Summary, Significance, and Conclusions

There is a need to improve operational effectiveness in healthcare institutions with the recognition of rates of readmissions and mortalities. Improving the degree of operational effectiveness at VA medical centers is a measure that can be replicated to other healthcare facilities. For this reason, it is necessary to adduce that healthcare provision in one healthcare facility can act as the building block to other healthcare institutions. This will allow the opportunity to record the changes experienced in the administration of healthcare needs. One of the varied features in the administration of healthcare is the fact that healthcare delivery is diverse, and that it captures necessary attributes from various facilities. The positive social change implication for this study is that a deduced approach in one facility can be effectively woven into other healthcare facilities, and a degree of consistency in operations will be deduced to the benefit of both the facility and the patients.

Conclusion

Healthcare officials do their best to ensure that patients are efficiently treated and that their needs are fully resolved. The administration of medication or treatment is a critical element of care and can be a key reason for readmission or a trigger cause of death when problems arise related to care. It is necessary to recognize that cases of readmissions are a challenge for both the patients and the healthcare providers in equal measure. Efficient delivery of services to patients is essential for healthcare facilities and may also lower the costs of the administration of healthcare services to patients. The framework adopted, therefore, draws on the need to improve efficiency by denoting the

rates of mortalities, minimizing readmissions, and improving healthcare delivery to patients and across healthcare institutions, a benchmark upon which the healthcare domain can effectively depend. The findings of this study may improve patient outcomes by identifying trends in readmission rates for COPD patients in VA medical centers. The identification of the need for changes in healthcare delivery will lead to a reduction in readmissions and patient deaths. Patients in healthcare facilities may benefit from changes geared towards the quality of healthcare.

Section one captured the definition of terms, the research questions, the purpose of the research and the literature review related to the readmissions and death rates within 30 days for COPD patients in VA medical centers. Section two will evaluate the research design that was used to analyze and evaluate cases of readmissions and death rates in VA medical centers.

Section 2: Research Design and Data Analysis Plan

The purpose of this quantitative study was to determine the extent to which readmissions and death rates within 30 days of discharge for patients with COPD at selected VA medical centers differed between 2015 and 2018. This section will include a discussion of the research design, methodology, and threats to validity.

Research Design Rationale

The research design that was used is a quasi-experimental quantitative design. This design was chosen because it offers diversity in evaluating the relationship between independent and dependent variables (Cook et al., 2020) as well as its effectiveness in analyzing data without randomization. Since the data analyzed for VA medical centers was not random but mainly consisted of a chosen sample over a given period of time, the quasi-experimental design was appropriate. A quantitative quasi-experimental design provided information about the difference between the rates of readmissions and the rates of death at VA medical centers. The dependent variables were the readmissions and death rates in VA medical centers, and the independent was the rate of increase or decrease in readmissions and mortality rates across the years.

Methodology

Population

In this research study, I analyzed information from 171 VA medical centers. The dataset was the Veterans Health Administration readmissions and death rates dataset. The data set captured data from 2015 to 2018. The research was limited to participants who are 50 years of age and above. The age group chosen was the most active and therefore

likely most affected by the prevalence of cases of COPD (GBD 2015 Chronic Respiratory Diseases Collaborators, 2017). The research left out participants who are above 50 years of age based on the chances of other types of illnesses associated with age, including diabetes and other age-related sicknesses (Wei et al., 2017). The geographical areas of the research were not limited to a specific region. VA medical centers are spread across the United States. The research therefore employed data from different regions, which heightens data analysis in a non-biased manner.

Sampling and Sampling Procedures

The sample size for this research study was calculated using G Power software version 3.1. Using G*Power 3.1 and the following parameters: $\alpha = 0.05$, effect size =0.15; power = 0.7; the sample size was calculated to be 171.

Operationalization of Constructs

The variables that were evaluated were readmissions and death rates at VA hospitals, and whether there was significant increase or decrease in readmissions and death rates across the years. Various VA medical centers were in different states. The measurement of the variables was based on whether patients who had been treated for COPD at a VA medical centers are readmitted to the facility within 30 days of their release. The frequency in which the patients come back for medication within 30 days can determine the rate of readmissions. A more specific evaluation captured whether the patients were hospitalized for the same condition they had been suffering from in their previous admission. The data reflected the number of patients who were hospitalized at the VA medical centers over a specific period and who had to subsequently return to the

hospital for medication within 30 days.

Data Analysis Plan

The software that was used to evaluate the data is SPSS version 25. The analysis of the data was based on the following research questions and hypotheses:

RQ 1: To what extent do readmission rates within 30 days of discharge for patients with chronic obstructive pulmonary disease at VA medical centers differ for the period between 2015 and 2018?

$H_0$1: Readmission rates within 30 days of discharge for patients with chronic obstructive pulmonary disease at VA medical centers do not differ for the period between 2015 and 2018.

$H_1$1: Readmission rates within 30 days of discharge for patients with chronic obstructive pulmonary disease at VA medical centers significantly differ for the period between 2015 and 2018.

RQ 2: Is there a difference in death rates within 30 days of discharge for patients with chronic obstructive pulmonary disease at VA medical centers for the period between 2015 and 2018?

$H_0$2 There is no difference in death rates within 30 days of discharge for patients with chronic obstructive pulmonary disease at VA medical centers for the period between 2015 and 2018.

$H_1$2: There is a difference in death rates within 30 days of discharge for patients with chronic obstructive pulmonary disease at VA medical centers for the period between 2015 and 2018.

Data were analyzed using a one-way ANOVA test. In the interpretation of the data, $p < .05$ values were taken into consideration to determine whether the analyzed data has statistical significance. The choice of one-way ANOVA test is based on the two dependent variables—readmissions and death rates

Threats to Validity

The first threat to validity was the cause of readmissions and deaths. The number of patients who died during the designated period and those who were readmitted to the healthcare facility are included in this dataset, making it difficult to determine if the cause for readmissions was COPD. Another threat to validity was external occurrences, such as an outbreak of a disease in a particular region. A particular healthcare facility could be singled out for having an increase in negative outcomes, whereas the community was affected by the disease outbreak. Internal threats to validity include staffing and errors made in research. The results obtained from this research can be valid for a proper analysis of the results. The research should have a balanced error-free operation, with the same degree of errors for all the patients. Since this standardized measure cannot be realized, the outcomes for all the different facilities would be deemed to have had a degree of error in their reporting. Threats to statistical conclusion validity include the possibility for type 1 and 2 errors. Statistical significance was determined by an alpha level of 0.05.

Ethical Procedures

The dataset that was used is publicly available. The data used for this study are based on reliable institution resources. Before initiating this research, institutional review

board (IRB) approval was granted by the Walden University IRB (#01-23-23-0522739). The data will be stored in a password-protected computer for 5 years, after which it will be destroyed.

Summary

The research was aimed at analyzing readmissions and death rate trends in VA medical centers. The research involved the analysis of a secondary dataset to identify health provision trends in VA medical centers. These results of this research may help identify opportunities for improvement, which can be availed in VA medical centers to reduce medical centers readmissions and death rates. Section 3 will provide the results of the analyzed data for the study.

Section 3: Presentation of the Results and Findings

The purpose of this quantitative study was to determine the extent to which readmissions and death rates differs within 30 days of discharge for patients with COPD at selected VA medical centers between 2015 and 2018. The research is based on two research questions addressing the extent to which rates of readmissions rates within 30 days for COPD patients differed from 2015 to 2018 based on location and the extent to which rates of death within 30 days for COPD patients differed from 2015 to 2018 based on location. Section 3 will include information about data collection and the results of data analysis.

Data Collection of Secondary Dataset

Data was collected from the VA medical center archives. This secondary data set included records of readmissions and death rates for 171 VA medical centers for the years between 2015 and 2018. The data are readily available to the public, and there is no mandate to communicate to the VA medical center leadership to receive approval to use the data. Information included in the dataset was the name of the center, the state where the center is located, and information related to mortality and readmissions rates. Out of the 137 records for readmission rates, only 10 have missing information. Of the 137 mortality rate records, 12 of them had missing data. However, these records included sufficient information for analysis. The dataset was limited to cases of readmissions and mortality rates only for patients suffering from COPD and which occurred 30 days after their discharge. See Tables 1 and 2 for readmission and death rates by state.

Table 1

Mortality Frequencies by State

Mortality	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12	8.8	8.8	8.8
AL	2	1.5	1.5	10.2
AR	2	1.5	1.5	11.7
AZ	2	1.5	1.5	13.1
CA	8	5.8	5.8	19.0
CO	2	1.5	1.5	20.4
CT	1	.7	.7	21.2
DC	1	.7	.7	21.9
DE	1	.7	.7	22.6
FL	7	5.1	5.1	27.7
GA	3	2.2	2.2	29.9
IA	2	1.5	1.5	31.4
ID	1	.7	.7	32.1
IL	5	3.6	3.6	35.8
IN	2	1.5	1.5	37.2
KS	3	2.2	2.2	39.4
KY	2	1.5	1.5	40.9
LA	2	1.5	1.5	42.3
MA	1	.7	.7	43.1
MD	1	.7	.7	43.8
ME	1	.7	.7	44.5
MI	5	3.6	3.6	48.2
MN	1	.7	.7	48.9
MO	4	2.9	2.9	51.8
MS	2	1.5	1.5	53.3
MT	1	.7	.7	54.0
NC	4	2.9	2.9	56.9
ND	1	.7	.7	57.7
NE	1	.7	.7	58.4
NJ	1	.7	.7	59.1
NM	1	.7	.7	59.9
NV	2	1.5	1.5	61.3
NY	9	6.6	6.6	67.9
OH	4	2.9	2.9	70.8
OK	2	1.5	1.5	72.3
OR	2	1.5	1.5	73.7
PA	6	4.4	4.4	78.1
PR	1	.7	.7	78.8
RI	1	.7	.7	79.6
SC	2	1.5	1.5	81.0
SD	2	1.5	1.5	82.5
TN	4	2.9	2.9	85.4
TX	5	3.6	3.6	89.1
UT	1	.7	.7	89.8
VA	3	2.2	2.2	92.0
VT	1	.7	.7	92.7
WA	2	1.5	1.5	94.2
WI	3	2.2	2.2	96.4
WV	4	2.9	2.9	99.3
WY	1	.7	.7	100.0
Total	137	100.0	100.0	

Table 2

Readmission Frequencies by State

Readmission	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10	7.3	7.3	7.3
AL	2	1.5	1.5	8.8
AR	2	1.5	1.5	10.2
AZ	3	2.2	2.2	12.4
CA	8	5.8	5.8	18.2
CO	2	1.5	1.5	19.7
CT	1	.7	.7	20.4
DC	1	.7	.7	21.2
DE	1	.7	.7	21.9
FL	7	5.1	5.1	27.0
GA	3	2.2	2.2	29.2
IA	2	1.5	1.5	30.7
ID	1	.7	.7	31.4
IL	5	3.6	3.6	35.0
IN	2	1.5	1.5	36.5
KS	3	2.2	2.2	38.7
KY	2	1.5	1.5	40.1
LA	2	1.5	1.5	41.6
MA	1	.7	.7	42.3
MD	1	.7	.7	43.1
ME	1	.7	.7	43.8
MI	5	3.6	3.6	47.4
MN	1	.7	.7	48.2
MO	4	2.9	2.9	51.1
MS	2	1.5	1.5	52.6
MT	1	.7	.7	53.3
NC	4	2.9	2.9	56.2
ND	1	.7	.7	56.9
NE	1	.7	.7	57.7
NJ	1	.7	.7	58.4
NM	1	.7	.7	59.1
NV	2	1.5	1.5	60.6
NY	9	6.6	6.6	67.2
OH	4	2.9	2.9	70.1
OK	2	1.5	1.5	71.5
OR	2	1.5	1.5	73.0
PA	6	4.4	4.4	77.4
PR	1	.7	.7	78.1
RI	1	.7	.7	78.8
SC	2	1.5	1.5	80.3
SD	2	1.5	1.5	81.8
TN	4	2.9	2.9	84.7
TX	5	3.6	3.6	88.3
UT	1	.7	.7	89.1
VA	3	2.2	2.2	91.2
VT	1	.7	.7	92.0
WA	2	1.5	1.5	93.4
WI	3	2.2	2.2	95.6
WV	4	2.9	2.9	98.5
WY	2	1.5	1.5	100.0
Total	137	100.0	100.0	

Results

Data analysis was conducted using SPSS software, version 25. The statistical test analyzed was regression, one-way ANOVA test and frequencies. The findings of the statistical analysis are described by research question.

Research Question 1

RQ 1: To what extent do readmission rates within 30 days of discharge for patients with COPD at VA medical centers differ for the period between 2015 and 2018? From the data analysis, the results project that the data indicates a statistical significance (see Table 3). The readmission rates for the periods between 2015 and 2018 differ significantly ($p < 0.05$). The results of the data indicate that there have been changes in readmissions rates across the years. The test conducted was one way ANOVA test (see Table 4). From the records of the data analysis, the *p* value is significant, therefore the null hypothesis is rejected, and the alternate hypothesis is accepted. See Tables 5 and 6 for coefficients and descriptive statistics for the data set.

Table 3

Regression Test for Readmissions

Model Summary				
Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.997[a]	.994	.994	.150067364107309

a. Predictors: (Constant), Higher Estimate, Lower Estimate

Table 4

ANOVA Test for Readmissions

ANOVA[a]						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	447.280	2	223.640	9930.642	.000[b]
	Residual	2.793	124	.023		
	Total	450.073	126			

a. Dependent variable: Score

b. predictors: (constant), higher estimate, lower estimate

Table 5

Coefficients Test for Readmissions

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% CI for B	
		B	SE	Beta			Lower Bound	Upper Bound
1	(Constant)	.337	.130		2.592	.011	.080	.594
	Higher Estimate	.633	.014	.620	46.142	.000	.605	.660
	Lower Estimate 4	.381	.012	.415	30.921	.000	.356	.405

Table 6

Descriptive Statistics

Mortality Rates				
N	Score	Lower Estimate	Higher Estimate	Denominator
Valid	127	127	127	127
Missing	10	10	10	10
Mean	15.305905511811023	12.114960629921260	19.197637795275583	261.53
Median	15.360000000000000	12.300000000000000	19.000000000000000	244.00
Mode	16.170000000000000	10.000000000000000[a]	20.000000000000000	144[a]
Range	8.399999999999999	8.200000000000000	10.800000000000000	715
Minimum	11.820000000000000	8.700000000000000	15.200000000000000	28
Maximum	20.220000000000000	16.900000000000000	26.000000000000000	743

Research Question 2

RQ 2: Is there a difference in death rates within 30 days for patients with COPD at VA medical for the period between 2015 and 2018? The data records sought to highlight whether the records evaluated showed a true projection of the results, and whether there are differences in death rates within VA medical centers for the years 2015 to 2018. First, the data records are statistically significant ($p = 0.011$). The data highlights a statistical evaluation of the records of mortality rates and the differences that are captured in the data for the 4 years. The records of the dataset appropriate the data records to indicate fluctuations of mortality rates over the years for different facilities.

The differences in data records for individual facilities is apparent and fitting in presenting healthcare outcomes. The change in healthcare outcomes is across different facilities projects a normal fluctuation in mortality rates. See Tables 7–9 for data on mortality rates.

Table 7

Regression for Mortality Rates

Model Summary				
Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.956[a]	.913	.912	.382688714429719

a. Predictors: (Constant), Lower Estimate

Table 8

ANOVA for Mortality Rates

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	189.238	1	189.238	1292.162	.000[b]
	Residual	18.013	123	.146		
	Total	207.251	124			

a. Dependent Variable: Score

b. Predictors: (Constant), Lower Estimate

Table 9

Coefficients for Mortality Rates

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.815	.147		5.541	.000
	Lower Estimate	1.295	.036	.956	35.947	.000

a. Dependent variable: Score

Summary of Findings

The data captured 171 records of readmissions and mortalities between 2015 and 2018. Of these records, 137 were the ones subjected to analysis. After data analysis, the

outcome for RQ 1 was that readmissions rates within 30 days of discharge for patients with COPD at VA medical centers differ significantly between 2015 and 2018. For RQ 2, the data analysis demonstrated that there is a difference in death rates within 30 days of discharge for patients with COPD disease at VA medical centers for the period between 2015 and 2018.

Summary

The results from the data analysis capture the statistics of readmissions and mortality rates. From the data analyzed, the records indicated that there is a statistical significance with a *p* value of 0.000. The alternate hypothesis was accepted for RQ 1, indicating that states that readmission rates for patients with COPD differ for the period between 2015 and 2018. Regarding the mortality rates evaluation of the data for patients after 30 days of discharge, the *p* value is less than 0.05, which conclusively leads to a rejection of the null hypothesis and acceptance of the alternate hypothesis. In Section 4, I will present the interpretation of findings, limitations of the study, implications for professional practice and social change as well as recommendations for future research.

Section 4: Application to Professional Practice and Implications for Social Change

The purpose of this quantitative study was to determine the extent to which readmissions and death rates within 30 days of discharge for patients with COPD at selected VA medical centers differ between 2015 and 2018. The element of readmission and death rates at VA medical centers are key measures in the healthcare delivery as well as the growth of the organization. Research records and data related to readmissions indicated that there was statistical significance in relation to readmission and mortality rates for COPD after 30 days of discharge in VA medical centers between 2015 to 2018. This section presents an interpretation of the findings, limitations of the study, recommendations for future research, and the implications for professional practice and social change.

Interpretation of the Findings

This research evaluated cases of mortalities and readmissions in COPD patients within 30 days of discharge in VA medical centers between the years 2015 and 2018. Data collected from the research confirms the data presented regarding readmissions and mortality rates in the literature review (see Harti et al., 2016). The results also corroborated the information presented in the literature review by indicating that medical care can be improved by evaluating the readmission and mortality rates after 30 days of discharge in a healthcare facility. This information holds true at VA medical centers regarding cases of mortality rates and readmission rates. An analysis of the parameters of readmission rates and mortality rates gives a vital benchmark for health improvement, as readmission rates in medical centers are negatively affected by their location and occur

quite frequently in these healthcare facilities (Navacchi & Lockwood, 2020).

The theoretical framework that guided this study was transition theory. The results conform with the idea of transitions theory, where the results of the research are a transition from one geographic location to another and with different healthcare outcomes. The theory aligns with cases of diversities that are realized in different locations. This includes transitions in the weather conditions and the location's access to supply of vital resources especially medical kit. Different localities also have their specific cultural perception toward health, which will be supported by the staff in these facilities. Transition theory is a case of changes, either positive or negative, that will inform a healthcare facility to make the necessary adjustments to keep its operations successful. Healthcare delivery is best presented as a sequence of changes toward ensuring that better healthcare outcomes are realized in healthcare facilities.

Limitations of the Study

One of the limitations in the research that was conducted was in the years over which the research was conducted. Due to the large magnitude of data records, the research was constrained to a period of a few years. The limitations imposed in such an approach were that there could have been a drastic divergence in the statistics of readmissions and mortality rates for patients of COPD within 30 days of discharge, but these would not be captured since they are outside the years that the research analyzed. The research also suffered from the element of generalization of the records and the fact that the data were weighted on the same scale of the number of readmission rates and mortality rates within 30 days of discharge. The limitation of the number of days at 30

meant that even if cases of mortality rates and readmissions rates should spike on the day after the 30th day, then they will not be recognized as valid indicators of readmissions and mortality rates.

The other limitation was in the choice of data records. Data analysis was based on the choice of a data set that was provided by the facility. This data is certified to be true since it is the approved records that the healthcare facility has tendered to the government to indicate the provision of services and its purpose in operations. However, it is important to recognize that the medical facility has a discretion over the data, and if there was an error in the tabulation of the records, then it would be captured in the data analysis and stand out as an element of limitation to the trustworthiness of the research.

Recommendations

Based on the findings of this research, the first recommendation is that healthcare facilities should have a follow-up program for every patient who is discharged for a period of 30 days after discharge. This program could help healthcare facilities assess the effectiveness of services they offer for the patients who leave the facility. Second, healthcare facilities must ensure that a patient is in a stable condition before they are discharged from the healthcare facility to lessen the chances that their health gets worse. Additionally, patients should recover enough to report on their health condition before they are discharged. Third, the administration of healthcare services should focus on every patient as an individual. This will ensure that the patient receives the best care before they are discharged from the healthcare facility. Healthcare facilities should have a specific procedure through which patients will be treated at home. Home care should be a

comparative manner of attending to the patient, which equals the services that they received at the healthcare facility. There should be a defined manner of communication between the healthcare facility and those patients who are discharged.

Future research could identify ways through which organizations can improve the provision of healthcare services. Recommendations for quantitative research could be including additional organizations beyond VA medical centers to diversify the data and capture additional outcomes based on the different types of management that occur in these organizations. Future quantitative research could also capture healthcare facilities from different states and amalgamate that data to capture trends in healthcare in the United States. In addition to evaluating data on the case of healthcare outcomes on readmission and mortality rates, future research could include a third parameter of age and only evaluate health outcomes for those individuals. This approach could capture a decisive approach to the quality of healthcare rendered by age by checking cases of readmissions and mortality rates. Further, qualitative research could be conducted to gather information based on the quality of services rendered. The future recommendations could be geared to better target identification of causes of healthcare outcomes.

Implications for Professional Practice and Social Change

The implications of this research for professional practice are that healthcare services can be improved by engaging professionals in a way that will evaluate the various operational procedures to check whether they lead to positive outcomes or negative outcomes. The presented suggestions are that healthcare facilities should

dedicate professionals to analyze the case of diversity in healthcare outcomes. Healthcare outcomes can be improved by giving the various stakeholders who are involved in the health sector an opportunity to participate in the gathering of data about trends in healthcare. This will offer an opportunity to have healthcare organizations focused on simple aspects of healthcare delivery and provide better healthcare, reducing cases of readmissions and costs of healthcare and an eventual reduction in mortality rates in healthcare facilities across the world.

Social change specifically points out to the involvement of the various stakeholders who relate to healthcare. These are healthcare officers, patients, and family members to be concerned about the trends in healthcare. Social change that could be achieved at the individual level is the identification of the importance of keeping records on readmissions and their duration. The research could also bring about social change at the family level. A reporting of a change in the healthcare service outcomes that are taking place in healthcare organizations as well as to patients at home after discharge could inform on the specific measures that can be analyzed to find the underlying cases of healthcare causes and lead to better healthcare. This research could also affect the future development and implementation of policies regarding health. Healthcare facilities will be challenged to ensure that they provide the necessary measures that capture cases of readmissions and mortality rates. The best healthcare outcomes can and will only be realized when all those who are involved in healthcare service provision work together.

Conclusion

The study on cases of readmission rates and mortality rates for patients suffering

from COPD after 30 days of discharge used 5 years of readmissions and mortality rates for the patients in VA medical centers. To assume control over COPD in healthcare facilities, the measures recommended could help to improve the operating conditions of healthcare facilities but also of the measures that are taken by clients who visit these healthcare facilities. Research has highlighted that relevance to social change aligns to the various stakeholders involved. Healthcare delivery is a collective measure, which involves the healthcare facility, the patients, and home care givers. A lapse in either of the three could weaken the ability to offer the best healthcare services possible. From the healthcare facility's perspective, the measures applied could edge on providing an opportunity for other stakeholders to play their part with ease. Any measures, however, that aligns to actions that the healthcare facility can implement to cater for the case of readmission and mortality rates should be implemented promptly. Success in these healthcare facilities could be realized as a straightforward decision to act on cases of discharge without delay and an unvarying commitment to communication with those who are discharged. Actions taken at the facility can help with a continuous projection of the needs in the healthcare facility.

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