2020

# Inpatient Stays Involving Mental Illness and Substance Use Disorders

LaTonya Smith
*Walden University*

# Walden University

College of Health Sciences

This is to certify that the doctoral study by

LaTonya Smith

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Rabeh Hijazi, Committee Chairperson, Health Sciences Faculty
Dr. Nazarene Tubman, Committee Member, Health Sciences Faculty
Dr. Richard Palmer, University Reviewer, Health Sciences Faculty

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

Walden University
2020

Abstract

Inpatient Stays Involving Mental Illness and Substance Use Disorders

by

LaTonya Smith

MS, Ashford University, 2013

BS, Jackson State University, 2011

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Healthcare Administration

Walden University

November 2020

## Abstract

Nearly one-third of Americans suffer from a mental illness. Twenty-three million people are affected by substance use or a dependency issue and the length of stay for patients enrolled in treatment services is rising. Mental health issues and substance use are rising within the United States and are associated with increased healthcare costs and the need for healthcare services. The purpose of this quantitative study was to determine the association between inpatient services, residential, outpatient, age, and payer source on substance use and mental health services using the 2017 Substance Abuse and National Mental Health Services Administration survey. The Donadebian Theory was used as the foundation of the study; the dependent variables in this research were mental illness and substance use. The independent variables in the research were inpatient and outpatient services, payer source, and cost. The data set included 11,582 mental health, 6,466 substance use, 9,697 inpatient, and 8,853 outpatient clients. A Chi-Square test and regression analysis found there was no significant association between the independent variables and mental health as well as substance use services. The study contributed to positive social change by advancing the field of behavioral health for practitioners and recommending viable solutions to decrease the length of stay through providing holistic treatment to individuals who suffer from substance and mental health issues.

# Inpatient Stays Involving Mental Illness and Substance Use Disorders

by

LaTonya Smith

MS, Ashford University, 2013

BS, Jackson State University, 2011

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Healthcare Administration

Walden University

November 2020

# Dedication

This dissertation is dedicated to my parents, Harlen and Jeanette Cavett, to my kids, Kanetra, Kearra, and Robert, and to my grandchildren, my family, and friends. I am grateful to those who accompanied me through this process. Thank you for the unconditional love and support.

# Acknowledgments

I would like to give my sincere gratitude and appreciation to Dr. Robert Hijazi for your constant support and motivation. Thank you for the exceptional feedback from my chair, Dr. Nazarene E. Tubman and Dr. Richard Palmer. I would like to also acknowledge my uncle, Dr. Anthony Owens, who motivated me to begin this process. Also, thank you to Dr. Chester Wilson for being a great support in this journey. I would also like to reiterate my gratitude to my family and friends for their support and understanding throughout my doctorate program. I would not have completed this journey without each of you.

Table of Contents

List of Tables

Section 1: Foundation of the Study and Literature Review

## Introduction

Mental health is treated medically just as any other biological medical illness. In the United States, nearly one-third of citizens suffer from a mental health or substance use illness. This results in approximately one in four people in the United States suffering from a mental illness. Approximately six percent of the population suffers from a mental illness. Mental illness accounts for over 57.5 billion in expenses and people with a mental illness have a probability of dying 25 years earlier than those without a mental illness diagnosis (Malla et al., 2015).

Substance use is also diagnosed as a medical issue that requires timely treatment (Substance Abuse and Mental Health Services Administration [SAMHSA], 2014). Nine percent, or 23 million people, ages 12 and over have an alcohol or drug abuse dependence (SAMHSA, 2014). There are degrees of substance use. The five stages of substance use are: (a) contact, which is known as the first use; (b) experimental use, which is the occasional feel good use; (c) excessive use, which is when the user begins chasing the high; (d) addiction, which is using despite the negative consequences associated with it; and (e) recovery, which is restoration to the state before use and maintenance of sobriety (SAMHSA, 2014).

Behavioral health providers are experiencing an overflow of substance use and mental health clients, which is resulting in the lack and unavailability of treatment beds for inpatient stays when needed (Malla et al., 2015). Owens et al. (2019) advised "enhancing utilization of continuing care of both mental health and substance-use related

problems" (p. 11). Therefore, the problem I identified in this research was the increasing length of stay with patients who are diagnosed with mental and substance use disorders. This topic needs to be explored to understand the effects that substance use and mental health services have on inpatient stays. While the unavailability of treatment beds is a direct effect of the rising need of substance use and mental health services, I explored the level of care and the rising cost. This study is needed to examine the factors associated with mental health and substance use services and how they shape the decisions regarding level of care, age, and payer decisions for healthcare administrators. These variables are directly related to the problem because they are all factors in the care or lack thereof a person receives. They are also contributors regarding a person's length of stay in inpatient treatment. The positive change implications for this study are that it may be used by healthcare administrators to streamline services provided by healthcare agencies.

In this study, I provide the foundation necessary to create the opportunities for more treatment availability and cost-effective services. The quantitative data shown in this study may support treatment providers who seek to analyze and assess their organization's capability, ability to provide services, cost of services, and payer source to create and implement qualitative measures that allow administrators to make informed decisions regarding the care of their patients served. Currently mental health and substance use, or the lack thereof, is highlighted in media outlets; conversations range from causes to needs, or the lack of availability and services (Malla et al., 2015).

## Problem Statement

SAMHSA (2014) stated that mental health and substance use is rising in the United States. As a result of this rise, there is a need to examine the problems that occur as a result of the increased need for these behavioral health services, which is the length of stay and the rising cost (Malla et al., 2015). According to Owens et al. (2019), researchers should identify barriers to successfully integrate programs for people with mental health and substance use disorder. Consequently, the problem I identified in this research was the increasing length of stay with patients who are diagnosed with mental and substance use disorders. This problem is exacerbated with the fact that mental health and substance use professionals are decreasing (Miller & Farley, 2015). This rise is irrespective of the payer source or the person's age. Owens et al. (2019) stated that there were nearly 10 million mental health and substance use inpatient stays in the United States. Mental health and substance use are major contributors to the global burden of disease, involving substantial social and economic cost (Heslin et al., 2015). This constitutes for 6.1% for mental illness and 21.7% percent of substance use inpatient stays respectively. Additionally, inpatients stay for mental health illnesses and substance use combined cost was $15.3 billion for adults ages 18–64 years old (Owens et al., 2019). While there were varying reasons related to substance use and mental illness, the primary reasons were alcohol-related disorders and schizophrenia (Owens et al., 2019). The issues that result for healthcare administrators is due to the rise in the number of patients being treated for substance use and mental health services; therefore, there is a need to examine the association of the independent variables of inpatient services, residential, outpatient,

age, and payer source and the statistical impact each may have on the dependent variables of substance use and mental health services.

## Purpose of the Study

The purpose of this quantitative study was to evaluate the association of the independent variables: (a) inpatient services, (b) residential, (c) outpatient, (d) age, and (e) payer source on the dependent variables: substance use and mental health services. Creswell (2012) described a quantitative methodology as a venue for testing a theory by examining the relationship of the variables. I tested the independent variables of inpatient services, residential, outpatient, age, and payer source and their statistical correlation to the dependent variables of mental health and substance use services based on the utilization of surveys from SAMHSA (2018). Creswell (2012) noted that researchers use quantitative methods to test variables to determine the impact of the results. I used a quantitative methodology to examine the level of service, age, and payer source. I sought to investigate the impact of these variables on substance use and mental health services. I used numerical data to determine the statistical correlation on substance use and mental health services.

## Research Questions and Hypothesis

The research questions that guided this study were:

RQ1: What is the association between “inpatient services, residential, outpatient, age, and payer source” on “substance use services” using the 2017 Substance Abuse and National Mental Health Services Administration survey?

$H_0$1: Based on the results, there is no statistical significance between "inpatient services, residential, outpatient, age, and payer source" on "substance use services" using the 2017 Substance Abuse and National Mental Health Services Administration survey.

$H_a$1: Based on the results, there is statistical significance between "inpatient services, residential, outpatient, age, and payer source" on "substance use services" using the 2017 Substance Abuse and National Mental Health Services Administration survey.

RQ2: What is the association between "inpatient services, residential, outpatient, age, and payer source" on "mental health services" using the 2017 Substance Abuse and National Mental Health Services Administration survey?

$H_0$2: Based on the results, there is no statistical significance between "inpatient services, residential, outpatient, age, and payer source" on "mental health services" using the 2017 Substance Abuse and National Mental Health Services Administration survey.

$H_a$2: Based on the results, there is a statistical significance between "inpatient services, residential, outpatient, age, and payer source" on "mental health services" using the 2017 Substance Abuse and National Mental Health Services Administration survey.

## Theoretical Foundation for the Study

In a healthcare environment where mental health and substance use has been routinely and negatively highlighted, it is necessary to explore its impact. The

Donabedian theory (1998) is based on the idea that if the structure of healthcare is improved then clinical processes and outcomes should improve (Moore et al., 2015). Donabedian's model evaluates three components: structure, process, and outcome (Donabedian, 2005). The measurement for improvement also has an additional outcome of balancing (Donabedian, 2005). Donabedian contended that structure measures have a direct effect on process measures, which ultimately affect outcome measures (Donabedian, 2005). Therefore, this research was grounded in the Donabedian theory.

Due to the importance of how structure measures are implemented, when to use them is of high importance. Outcome measures reflect the impact on the patient and show the result of improvement efforts and whether those efforts have achieved the desired goals (Donabedian, 2005). An example of an outcome measure is the length of stay in inpatient services. I used this theory to examine the impact of these illnesses.

Process measures reflect the way the systems and processes work to deliver the outcomes desired (Donabedian, 2005). Ultimately, this is described as a quality improvement measure, and an example is the length of waiting time to obtain services. Structure measures reflect the characteristics of the provider (Donabedian, 2005). This includes the ratio of staff to patient and the hours of operation. Balancing measures refer to unintended issues, which can be positive or negative (Donabedian, 2005), such as readmissions. Consequently, I used Donabedian's theory to examine the independent variables of inpatient services, residential, outpatient, age, and payer source and their statistical impact they may have on the dependent variables of substance use and mental health services.

## Nature of the Study

I utilized a correlational quantitative approach for this study. According to Creswell (2012), quantitative research is a means for testing objective theories by examining the relationship among variables. I used a quantitative approach to test the variables and to determine the impact of mental health and substance use illness. I measured the variables so that the numbered data could be analyzed using statistical procedures. I used secondary data for this study. The database, Healthcare Cost and Utilization Project (HCUP) was inclusive of the variables within this research. I used the data to investigate and measure the impact of mental illness and substance use on patient stays.

Therefore, the results of this study can be used to understand the impact of mental illness and substance use including the levels of care and cost associated with it, as outlined in the data set being utilized (e.g., Owens et al., 2019). Additionally, this research can be utilized at each level of care by the person's affected by mental illness and substance use. The research questions that guided this study were used to examine the association of the level of care in substance use and mental health and its impact. These results provided research-based information to ensure adequate services for those that are affected by substance use and mental illness.

The variables of this study included the dependent variables of mental health and substance use services and the independent variables which include residential, outpatient, age, and payer source. Owens et al. (2019) described inpatient treatment as continuous medical services received with being admitted for over 24 hours. For this

study, the independent variable was “inpatient services,” receiving services over a period of 24 hours without interruption. Owens et al. (2019) also defined residential services as a group of four or more individuals who live or share a space while receiving care services; however, this study used “residential,” a treatment facility that provides inpatient services to individuals, as an independent variable. Owens et al. (2019) defined “outpatient” as a treatment facility that provides services that do not extend over 24 hours and the final independent variable, “payer source” as the person or agency that will render payment for services provided to an individual.

The purpose of this quantitative study was to evaluate the association of the following independent variables: (a) inpatient services, (b) residential, (c) outpatient, (d) age, and (e) payer source on the dependent variables substance use and mental health services. Correlation quantitative was the methodology used for this study. Secondary data from SAMHSA (2018) were used for this study. I requested the data from the research site, a behavioral health organization that provides mental health and substance use services. The data collected included historical data from the organization for services previously provided to clients. The data set used included 11,582 mental health patients, 6,466 substance use patients, 9,697 inpatient, and 8,853 outpatient clients. The organization supplied raw data that contained the variables being studied, including independent variables of inpatient services, residential, outpatient, age, and payer source as well as the dependent variables of substance use and mental health services. These data were analyzed by using McNemar’s Chi-Square Test to measure inpatient and residential programs and Fisher’s exact test measure age and payer source.

## Literature Search Strategy

The library and databases that were used to compose the literature reviewed were retrieved from JSTOR, EBSCO Host, SAMHSA, ProQuest, and ERIC. The key search terms were *substance use*, *mental health, healthcare administration, inpatient, outpatient, payer source,* and *behavioral healthcare.* Research from the last 5 years was included in the initial search. Historical data for substance use and mental health from 2012 enhanced the search pool.

## Literature Review

In this literature review, I evaluated the relationship between inpatient stays and outpatient services, residential services, costs of services, age, and payer source, and I explore the availability of such services and their impact on mental health and substance use services in the United States. In this literature review, I also explored the rising rates of mental illness and substance use disorders, evaluate the utilization of outpatient services and inpatient services for adults and adolescents, and I assessed the costs of treatment per service and by age, while identifying the payers or funders of mental health and substance use services. In this section, I also outline important future implications for healthcare administrators to consider in regard to informed choices about the administration of healthcare services.

Rates of mental illness and substance use are rising among all individuals in the United States (SAMHSA, 2014). Twenty percent of the adults in the United States were reported to have lived with a mental illness in the past year in 2017 (SAMHSA, 2014). From 2008 to 2016, the estimates of adults with severe mental illnesses were lower than

the estimates reported in 2017 (SAMHSA, 2018a). At that time, nearly 20% of the nation's adults also suffered from a substance use disorder, with 3.1 million adults having a co-occurring serious mental illness (SMI) and substance use disorder (SUD) in the past year. Although inpatient services were the least commonly utilized by all adults across all age groups, expenditures for inpatient state psychiatric hospitals have increased at average rate of growth of 2.7% per year with 2,257 inpatient psychiatric hospitals expending $20.6 billion on mental health services in 2008. Community-based mental health outpatient expenditures have grown at a rate of 1,427% over the past 35 years (SAMHSA, 2018a).

## Mental Illness

Mental illness is fairly common in the United States and occurs across a spectrum of many conditions with varying degrees of severity (SAMHSA, 2018d). For adults aged 18 or older, the SAMHSA (2014) defines mental illness as having two dimensions in the 2017 National Survey on Drug Use and Health (NSDUH). According to the level of functional impairment, mental illnesses are separated into two categories: any mental illness (AMI) or SMI (SAMHSA, 2018d). AMI is a broad category composed of all recognized behavioral, emotional, or mental disorders, regardless of the level of impairment, which can vary from no impairment to moderate or severe impairment (SAMHSA, 2018c). SMI is a smaller subcategory of AMI that consists of severe mental illnesses characterized by significant functional impairment and an interference or severe limitation to the completion of major life activities (SAMHSA, 2018c). AMI without

SMI includes AMI with the exclusion of any occurrences of severe mental illnesses categorized as SMI (SAMHSA, 2018d).

In 2017 it was estimated that 46.6 million (18.9%) of U.S. adults, aged 18 or older lived with mental illness or AMI and had AMI in the past 12 months (SAMHSA, 2018c). There were 24% of adults with AMI had SMI in 2018, demonstrating that 11.2 million (4.5%) of nation's adults had SMI and 35.4 million or 14.3% had AMI without SMI (SAMHSA, 2018c). The percentage of adults with AMI in 2017 was higher than most of the percentages from 2008 to 2015 and is comparable to the percentage in 2016. Similarly, adults with SMI in 2017 had higher percentages than most years ranging from 2008 to 2016 (SAMHSA, 2018c). The percentage of adults with AMI excluding SMI in 2017 showed no significant change from 2008 to 2016 (SAMHSA, 2018c). This signifies a progressive increase in the number of adults with SMI and the increase in the severity of mental illnesses over the past decade.

AMI and SMI are designated for adults over the age of 18, but the NSDUH interview designates major depressive episodes (MDE) and MDE with severe impairments for adolescents that under the age of 18 (SAMHSA, 2018c). According to The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V), a lifetime MDE is defined by the presenting of at least five of nine symptoms almost daily within a two-week period in one's lifetime (National Institute of Mental Health [NIMH], 2018; SAMHSA, 2016). MDE with severe impairment may also be referred to as an SED; this designation demonstrates that a severe interference or problems in daily functioning occurred and was caused by a major depressive episode. An estimate of 9.4%

of the adolescents in the United States (or 2.3 million) had at least one MDE with severe impairment (NIMH, 2018; SAMHSA, 2016). This means that over 70% of the MDEs among adolescents occurred with severe impairments or disturbances in 2017.

## Substance Use

The 2017 NSDUH defines SUD as meeting criteria within the DSM-V for illicit drug or alcohol dependence or abuse, including alcohol use disorders and any illicit or specific drug use disorders (SAMHSA, 2018c). In 2017, 3.4% of the adult population (or 8.5 million adults) had both AMI and a SUD in the past year (SAMHSA, 2018c). There were 3.1 million adults had co-occurring SMI and a SUD or mental and substance use disorder (MSUD) in the past year (SAMHSA, 2018c). Regarding adolescents aged 12 to 17 with a past year MDE, 345,000 adolescents had a past year SUD as well. In other words, 10.7% of all adolescents in 2017 who had an MDE in the past year also had a co-occurring SUD (SAMHSA, 2018). Individuals with a diagnosis of MSUD were more likely to be admitted to inpatient treatment from the emergency department. Approximately 60.4% to 66.3% of individuals with a diagnosis of MSUD were admitted into inpatient care through the emergency department, in comparison to all emergency department (ED) visits without diagnosis of MSUD (46.3%) (SAMHSA, 2018). MSUDs typically cost more, require longer inpatient stays, and account for more than 25% of all inpatient stays (Owens et al., 2019).

From 2004 to 2009, drug-related emergency department visits increased by 81%, from 2.5 to 4.6 million (SAMHSA, 2018c). In 2009, 45% of all ED visits in the nation were drug related. An estimated 2.1 million ED visits involved substance use, including

the nonmedical use of pharmaceuticals (27.1% of drug-related ED visits) and illicit drugs and/or alcohol in combination with other drugs (35.5%) (SAMHSA, 2018c). Between 2004 and 2009, ED visits involving nonmedical use of pharmaceuticals increased at a rate of 98.4% from 627,291 to 1.2 million visits (SAMHSA, 2018c). Drug and alcohol-combination related ED visits for adolescents decreased slightly from 14,930 in 2010 to 13,166 in 2013 (National Institute on Drug Abuse [NIDA], 2011; Naeger, 2017).

## Treatment Services and Providers

Inpatient treatment services generally refer to healthcare services that require admission to a hospital or residential facility for one or more days (Health & Human Services [HHS], 2010). Facilities defined as inpatient provide 24-hour care for the treatment and diagnosis of mental and behavioral health conditions (HHS, 2010). Inpatient mental health service facilities include nongovernmental psychiatric hospitals, residential treatment centers, state psychiatric hospitals, and the psychiatric units of general hospitals. Over the past 50 years, a transition from inpatient care via state psychiatric hospitals to outpatient care via community-based mental health services has been demonstrated (National Association of State Mental Health Program Directors [NASMHPD], 2017; Owens et. al, 2019). This is especially true for individuals within the adolescent group. The number of individuals receiving psychiatric inpatient care or other inpatient residential treatment has decreased by over 63.9% or 300,000 individuals since 1970 (NASMHPD, 2017; Owens et al., 2019). This may reflect evolving mental health treatment philosophies or other objectives (i.e. cutting costs). Depressive disorders and schizophrenia were the most common reasons for inpatient stay; anxiety and

depressive disorders were the most common coexisting or secondary disorders for mental health inpatient stays (NASMHPD, 2017; Owens et al., 2019).

Outpatient treatment services offer services that do not require a stay at a facility (HHS, 2010). Outpatient services can include day programs, rehabilitation programs, counseling services, etc. There is not a clear designation process for determining if a provider is as an outpatient provider or other type of provider that provides less than 24-hour care. Outpatient providers are often synonymous with community-based providers (HHS, 2010). The providers of outpatient mental health services include day treatment programs, rehabilitation facilities, mental health centers, clinics, mental health professionals, and community-based mental health programs. According to the 2017 National Mental Health Services Survey (N-MHSS), an annual census of all known public and private mental health facilities, 40% of mental health treatment facilities in operation were outpatient facilities (HHS, 2010).

The NSDUH makes a distinction between specialty and non-specialty mental health services (HHS, 2010). Specialty mental health services are defined as services that are provided in outpatient, inpatient, or residential mental health settings or facilities by providers with a specific mental health focus on issues that are not caused by substance use disorders. Specialty mental health providers include psychiatrists, psychologists, and psychiatric nurses who possess graduate degrees with a focus of mental health. Other specialty mental health providers include counselors, nurses, social workers, and therapists who have received specialized training in the treatment of mental health illnesses. These providers may also provide services for substance use disorders (HHS,

2010). Non-specialty services typically include services that are provided through the education, justice, welfare, and general medicine systems that do not have a special focus of mental health or substance use. Forty-four percent and 43% of all publicly and privately recognized mental health facilities in the nation operated as specialty facilities, offering exclusive treatment approaches for individuals with SMI and co-occurring mental and substance use disorders (HHS, 2010). Specialty substance use treatment services include drug or alcohol rehabilitation programs, clinical treatments, or hospital care that focus on the treatment of issues related to substance use disorders (SAMHSA, 2018d, 2018e). Inpatient substance use treatment services include psychiatric hospitals, psychiatric units in general hospitals, residential drug treatment programs, and outpatient treatment services that specialize in SUD treatment and do not require a stay that extends beyond 24 hours (SAMHSA, 2018d, 2018e).

## Mental Health Service Utilization

Roughly 35.0 million adults aged 18 or older (14.4%) received any mental health services in 2016, which is similar to the receipt of services from 2012 to 2015 (Park et al., 2017). In contrast, the receipt of mental health services occurred at a much higher rate from 2002 and 2011. As of 2017, the most commonly utilized mental health services by adults in the past year were prescription medication treatments (12.0% utilization rate), outpatient services (6.9 %), and inpatient services (0.9%) (Park et al., 2017). Respectively, 29.4 million adults used prescription medication; 16.9 million utilized outpatient services; and 3.2 million adults used inpatient services. Mental health service utilization rates slightly increased from 2002 to 2016 for prescription medication

treatments (10.5% to 12%) and inpatient care (0.7% to 0.9%) (Park et al., 2017. Also, a slight decrease in mental health outpatient care from 7.4% to 6.9% occurred during the same period. The estimates of outpatient and inpatient service utilization remained fairly stable from 2002 to 2015. In 2016, there were nine million inpatient stays for a principle cause of mental and substance use disorders, constituting 27.8% of the 35.7 million total inpatient stays during that period (Park et al., 2017). Twenty-five percent of inpatient stays with a principal MSUD diagnosis were for depressive disorders, and 20% of inpatient stays were for substance use disorders and schizophrenia. In 2016, inpatient stays for schizophrenia cost an estimated $8,900 per stay and were an average length 11 days (Owens et al., 2019; Park et al., 2017).

The NSDUH utilizes several age groups to categorize populations and generally separates adults into three categories:18 to 25 (young adult), 26 to 49, and 50 or older (Cherry et al., 2018). From 2012 to 2014, the adult utilization of mental health services in specialty settings surpassed the utilization rate of mental health services in non-specialty medical settings. For example, mental-health related visits to psychiatrist offices were higher than visits to primary care physicians for all adults, ages 18 to 64. Adults over the age of 65 displayed no significant change from previous years, however (Cherry et al., 2018). In 2016, the percentage of adults receiving mental health services in the past year was lower for young adults aged 18 to 25 (12.9%) than adults aged 26 or older (29.4%), equating to 4.4 million young adults and 30.6 million adults aged 26 or older (Cherry et al., 2018).

During the same period, prescription medication was the most commonly used type of mental health service in the past year, with adults 26 to 49 (112.5 million or 2.6%) and 50 or older (13.6 million or 12.6%) (Cherry et al., 2018). Outpatient services are the second most commonly used service for all adults, with adults aged 26 to 49, 8.1% or 8 million, utilizing the highest percentage of services (Cherry et al., 2018). There were 2.5 million young adults who trailed behind, with an outpatient services utilization rate of 7.3%. Inpatient services were the least commonly utilized by all adults across all age groups. As of 2016, 1.5% of young adults (516,000), 1% percent of adults aged 26 to 49, and 0.7% percent of adults aged 50 or older (786,000) used inpatient mental health services in the past year (Cherry et al., 2018). The most common reason for inpatient mental health stays among the youngest and oldest populations were depressive disorders (Owens et al., 2019). The rate of inpatient stays was highest for adults between the ages of 18 and 64, and lower for adolescent and elderly populations over the age of 64, however (Owens et al., 2019).

The number of young adults aged 18 to 25 (12.9%) that used any mental health services in 2016 was higher than the percentages in most years between 2002 and 2015; for adults aged 26 to 49 (15.4%), the rates in 2016 were higher than the most years ranging from 2002 and 2008 and remained fairly stable from 2009 to 2015 (Cherry et al., 2018). For adults 50 or older (14%), rates were from 2002 to 2006, but were similar to most estimates from 2007 to 2015. Young adults in 2016 used more prescription medication for mental health issues at a greater rate than most estimates ranging from 2002 to 2015 (Cherry et al., 2018). Adults aged 26 to 49 had higher utilization rates of

prescription medication utilization than in previous years ranging from 2002 to 2008; and adults 50 or older had higher rates in 2016 than in years 2002 to 2006 (Cherry et al., 2018). Utilization rates for years 2008 to 2015 bear similar figures and demonstrate little change for adults that are 26 and older (Park et al., 2017). The percentage of young adults aged 18 to 25 who received inpatient and outpatient mental health services in 2016 was higher than the estimates in most years ranging from 2002 to 2015 (Park et al., 2017). Percentages of adults 26 and older that utilized outpatient and services inpatient remained fairly stable during the same period (Park et al., 2017).

The NSDUH reports that as of 2017, 3.6 million adolescents ages 12 to 17 (14.8%) received mental health services in inpatient and outpatient specialty mental health settings (SAMHSA, 2018e). The percentage values from 2009 to 2015 were lower than 2017 estimates, ranging from 12.0 to 13.7% (Park et al., 2017). This signifies that a slow and steady increase in the utilization of mental health services in specialty settings by adolescents has occurred over the past decade, namely community-based outpatient services. It also bears important implications for healthcare administrators regarding the demand for specialty services and the need for specialized training and treatment approaches.

The Mental Health Annual Report of 2016 estimates that 99% of adolescents (1.4 million) utilized community-based mental health outpatient services (Park et al., 2017). During the 2016 reporting period, 1.1% of adolescents (15,051) utilized residential treatment inpatient services (Park et al., 2017). Park et al. (2017) also report that 2.3% of adolescents (31,116) utilized other psychiatric inpatient facilities, and 0.5% or 6,786

adolescents utilized inpatient services at state psychiatric hospitals. Interestingly enough, 65% of the 1.4 million adolescents receiving community-based services had SED or MDE with serious functional impairment (Park et al., 2017). In comparison, 82% of adolescents in inpatient state psychiatric care had SEDs. This is a possible indication that outpatient services may have the capacity to effectively treat or manage SEDs.

## Substance Use Treatment Utilization

A 2015 SAMHSA publication shows that 1.9 million individuals received supported admission to SUD treatment services from a Single State Agency (SSA) in 2014 (SAMHSA, 2017). The publication also indicates that of 1.9 million SSA-supported admissions (614,084) were for inpatient services (residential or rehabilitation admissions) and the bulk (1.3 million) were for outpatient services (Park et al., 2017, p. 40). In 2016, 60% of the adults (2.1 million) who received substance use treatment in the past year received the treatment in a special facility or setting. An estimated 383,000 young adults aged 18 to 25 (1.1%) and 1.8 million (0.8%) adults 26 or older received substance use treatment at a specialty facility in the past year. Additionally, 42.3% (264,000) of young adults who received substance use treatment of any kind in the past year also received treatment at both specialty and non-specialty facilities (SAMHSA, 2017). There were 1.4 million (46.8%) adults, aged 26 or older, who were designated as receiving any type of substance use treatment and who also received treatment at both specialty and non-specialty facilities (SAMHSA, 2017). A limitation to the data provided is the lack of specificity of the types of care (outpatient or inpatient) that the facilities offer. It is

possible that the individuals who utilized both specialty and non-specialty facilities may have been transitioned from inpatient care to outpatient care.

## Payers

There are many payers of mental health and substance use services (SAMHSA, 2017). In the United States, Medicaid is the largest single payer for mental health services (SAMHSA, 2017). Medicaid is also the primary funder for low-income adults with mental illnesses. Medicaid covered the cost of service of 22% of low-income adults with AMI and 26% of adults with SMI in 2015 (Henry J Kaiser Family Foundation [HJKFF], 2017; Owens et al., 2019). Medicaid is an important payer for inpatient and outpatient mental health services, including counseling, prescription medications, and psychiatric care. Medicaid and Medicare funded roughly 60% of mental and substance use related inpatient stays for patients younger than 65 years of age (HJKFF, 2017; Owens et al., 2019).

Other sources include state funds, Medicare, federal block grants, commercial or private health insurance, and fee for service/self-payment (SAMHSA, 2017). The 2017 N-MHSS survey revealed that treatment facilities commonly accepted four types of payment or insurance options. Over 80% of all facilities accepted Medicaid (89%), cash or self-payment (84%), private health insurance (80%), and Medicare (69%) as acceptable forms of payment (SAMHSA, 2017). An estimated one in 10 inpatient stays with an associated mental health or substance use disorder for patients under the age of 65 were self-payment or not billed at all (Owens et al., 2019; SAMHSA, 2017).

Payers for adolescents age 10 to 17 generally include Medicare, Medicaid, Children's Health Insurance Program (CHIP), and state or federal programs (SAMHSA, 2017). Some states use appropriations for non-Medicaid services, block grants, and state matching for Medicaid and CHIP programs to fund mental health services (SAMHSA, 2019). In 2003, the aforementioned payers contributed 62% of total mental health care spending, an estimated $75 billion. In 2003, states contributed $42.3 billion total to mental health service expenditures and the federal government contributed $33.1 billion. The state and federal contributions comprised 27% of all mental health funding at that time.

SSAs provide funding and direct operation of SUD services (SAMHSA, 2019b). Mental Health Service Agencies (MHSA) may organize, coordinate, fund, and operate some mental health services including community-based mental health services or psychiatric inpatient services (SAMHSA, 2019b). MHSAs finance mental health services to the public via a combination of state funds, Medicaid, Medicare, federal block grants, and other funds. The largest funding source for MHSAs was Medicaid, accounting for 49% of funding and for 16% of SSA funds. A Substance Abuse Prevention and Treatment Block Grant (SABG) accounted for 32% of SSA funding (SAMHSA, 2019b). The SABG requires states to use a minimum of 20% of the annual grant for SUD prevention services. A Community Mental Health Services Block Grant (MHBG) accounted for 1% of MHSA funds. MHBGs require that funds be used to provide community-based mental health services to adults with serious mental illnesses and to children with serious emotional disturbances (SAMHSA, 2019b).

## Costs

In 2003, SAMHSA (2014) estimated that cost of mental/behavioral health services amounted to $121 billion; 83% ($100 billion) was allocated to the mental health treatment and 17% ($20 billion) was allocated to substance use treatment (SAMHSA, 2014). During the fiscal year of 2013 to 2014, MHSAs and SSAs expended over $45.8 billion in direct service and treatment, administration, research, etc. MHSA expenditures totaled $40.8 billion (89%) and SSA expenditures of $5.0 billion (11%) of all expenditures (SAMHSA, 2019b). When divided among the state civilian population, the SSAs and MHSAs spent a total of $142.72 per person on mental health and substance use treatment in 2014 (SAMHSA, 2019b). It is important to note that variations in funding exist from state to state. For example, Arkansas spent less than $50 per person and Alaska expended $398 per person for mental health and substance use treatment (SAMHSA, 2019b).

In 2014, MHSAs spent 75% of total expenditures ($30.6 billion) on the provision of outpatient, community-based mental health services (SAMHSA, 2019b). Twenty-three percent of the expenditures ($9.4 billion) were spent on inpatient state psychiatric hospital services. When factoring for age, MHSAs spent 65% of total expenditures ($27 billion) on mental health services for adults aged 18 or older and 26% or $10.4 billion on adolescents 17 or younger (SAMHSA, 2017). MHSAs expended $421 million for inpatient psychiatric hospital treatment for adolescents aged 17 or younger (4.5% of state psychiatric hospital inpatient expenditures) (SAMHSA, 2017). Expenditures for adolescent community-based mental health services (outpatient services) greatly exceed

those of inpatient state psychiatric hospitals. Expenditures for community-based mental health services for adolescents were $9.9 billion, which is a third of the total community-based mental health services expenditures (SAMHSA, 2017). Adult community-based mental health services costs were $17.2 billion. The expenditures of all public and private sources for mental and SUD treatment is expected to increase to $280.5 billion in 2020 (SAMHSA, 2014, 2017).

Private insurance carriers were some of the largest funding sources of SUD treatments in 2015. From 2006 to 2015, the expenditures of private insurance-funded SUD treatments increased from 19% to 29%. (SAMHSA, 2019). Within the same time frame, Medicaid costs also increased from 19% to 25%. Medicare is a minor contributor to SUD treatment funding. Medicaid funding decreased by 13% from 2006 to 2015 (30% to 17%) for other state and local sources. Eleven percent of all SUD treatments were funded by the federal government; this includes SUD block grants (SAMHSA, 2019b). There is a notable shift in funding toward private insurance coverage and or Medicaid funding for SUD treatments and away from funds issued by federal, state, and local authorities (SAMHSA, 2019a).

Since 1981, expenditures for inpatient state psychiatric hospitals have increased at average rate of growth of 2.7% per year (NASMHDP, 2017). More recently, the growth of inpatient state psychiatric hospitals has slowed to the lowest recorded values (from 2010 to 2015). In 2008, 2,257 inpatient psychiatric hospitals expended $20.6 billion on mental health services (NASMHDP, 2017). By 2016, inpatient stays for MSUDs amounted to 3.6% of all hospital costs and cost $15.3 billion, averaging a total cost of

$7,100 per stay with an average length of stay of 6.4 days, which is two to three days longer than other non-MSUD inpatient stays (NASMHDP, 2017). During the same period, adults who presented physical conditions in addition to coexisting MSUDs equated to 22% of hospital inpatient stays and 26% of hospital costs, totaling $110.3 billion with an average length of stay of 5.4 days per patient, which is roughly $3000 more expensive per stay and 1.2 days longer than stays for physical conditions without an MSUD (Owens et al., 2019).

The Emergency Medical Treatment and Labor Act (EMTALA) is a federal law that affects the cost and administration of healthcare (Centers for Medicaid & Medicare Services [CMS], 2012). EMTALA was enacted by Congress in 1986 and requires that hospital emergency departments provide a medical screen to every patient seeking emergency care. The Act also requires the stabilization and/or transfers of patients with medical emergencies regardless of their ability to pay. Although necessary for public health, the burden of the cost of care on inpatient facilities for uninsured patients could become quite problematic if not addressed. Under this law, psychiatric emergencies are considered to be medical emergencies. An appropriate transfer should be made, if a hospital is unable to or does not have the capability to stabilize a patient (CMS, 2012). Regarding the ability to pay, it is important to note that the number of uninsured inpatient stays and private insurance inpatient stays decreased from 2005 to 2014 by 13%, while Medicaid-covered stays increased by 15.7% (Owens et al., 2019). Although a decreased growth rate of community-based mental health (outpatient) expenditures had been noted, community-based mental health expenditures have grown much faster than state hospital

expenditures over the course of 35 years (NASMHDP, 2017). SMHA expenditures on community-based mental health services increased at a rate of 1,427% from 1981 to 2015, rising from $2 billion to $32.6 billion (NASMHDP, 2017, p. 52; Owens et al., 2019; HSS, 2010).

One limitation to the estimated expenditure data of MHSAs on the national level is the fact that not all states reported expenditures that include Medicaid expenditures for fee-for-service coverage or the statewide managed care program (SAMHSA, 2015. Thirty-one MHSAs have used a combination of managed care and fee-for-service plans to pay for mental health services in 2015; however, 13 MHSAs used only fee-for-service financing, and four MHSAs only operated under managed care only systems (SAMHSA, 2015).

## Availability

According to NIDA (2015), there is a continuous and large treatment gap in this country, meaning individuals in need of mental health or substance use treatment services experience barriers to accessing treatment services. For example, 22.7 million individuals (8.6%) needed substance use treatment, but only about 2.5 million people (0.9%) received substance use treatment at a specialty facility (NIDA, 2015).

Availability of mental health services is contingent upon the workforce that provides such services (Miller & Farley, 2015). A decreased workforce could result in a diminished availability of mental health services (Miller & Farley, 2015). In 2009, 66% of primary care providers reported were unable to link patients to outpatient mental health providers due to a shortage of professionals in the workforce (Nguyen et al.,

2018). Mental Health America reported that workforce shortages continue to exist among mental health professions. In states with a workforce shortage, individuals outnumber mental health providers at a rate of four to one. Areas that are rural and/or have a low-income per capita are most affected by mental health workforce shortages (Nguyen et al., 2018). Over 4,000 areas in the United States are considered to have a shortage of mental health professionals and these areas have more than 110 million residents (Miller & Farley, 2015; Nguyen et al., 2018).

The 2017 NSDUH Survey data from individuals who needed treatment services in specialty settings and did not receive them within the past year will be analyzed to further review the availability of mental health and substance use treatment services (SAMHSA, 2018c). Also, the perception of unmet needs of individuals who needed treatment services will be reviewed. In 2017, 18.2 million people aged 12 or older needed substance use treatment but did not receive specialty treatment in the past year. There were 942,000 adolescents aged 17 or younger, 4.7 million young adults aged 18 to 25, and 12.5 million adults aged 26 or older, who also needed substance use treatment but did not receive treatment at a specialty facility in the past year (SAMHSA, 2018c). Common reasons for not receiving treatment services included not being ready to quit using (39.7%) and lack of healthcare coverage or the ability to afford the cost of treatment (30.3%) (SAMHSA, 2018c). This points to the potential of healthcare coverage and/or affordability to act as a barrier to service availability.

From 2004 to 2016, roughly 41% of adolescents with a past year MDE (1.3 million in 2017) received treatment for depression (Nguyen et al., 2018). There were 59%

of adolescents with a past year MDE who did not receive any treatment at all. There were 1.1 million or 47.5% of adolescents in 2017 who had MDE with severe impairment within the past year who received mental health treatment; roughly, 52.5% individuals who had MDE with severe impairment in the last year did not. This rate has remained constant since 2011 and has implications for administrators regarding the visibility and availability of health care services (Nguyen et al., 2018).

In 2017, 13.5 million adults perceived an unmet need for mental health care in the past year (SAMHSA, 2018). There were 11.4% of young adults aged 18 to 25 (3.9 million), 6.5% adults aged 26 to 49 (6.5 million), and 2.7% adults aged 50 or older (3.1 million) who were perceived to have an unmet need for mental health care in the past year (SAMHSA, 2018). With regard to those who did not receive any treatment services but perceived an unmet need for mental health services, the number was 6.5 million (of 13.5 million) in 2018 (SAMHSA, 2018). There were 2.1 million young adults, 3.1 million adults aged 26 to 49, and 1.3 million adults aged 50 and older who were perceived to have an unmet need and did not receive treatment services (SAMHSA, 2018). The perception of unmet needs among individuals has been increasing gradually over time. The percentage of adults (5.5%) who perceived an unmet need for mental health care in 2017 was higher than the percentages in most years from 2006 to 2016 (SAMHSA, 2018). For example, in 2002 the young adults aged 18 to 25 who perceived unmet needs was 7.4%. By 2017, the number of young adults who perceived unmet needs rose to 11.4%, a higher percentage than all years ranging from 2002 to 2016 (SAMHSA, 2018).

Most adults that perceived an unmet need for mental health services and did not receive treatment reported that the main reason for not receiving services was the cost of care or the inability to afford care (Park-Lee et al., 2017; SAMHSA, 2018). Approximately 53% adults with severe mental illnesses reported not receiving care because of an inability to pay for services (SAMHSA, 2018). Another common reason that adults who perceived an unmet need reported for not receiving service is not knowing where to go for services and/or help (SAMHSA, 2018). This may point to a need for healthcare administrators to invest in client education, as well as maintaining an awareness of local services, outpatient programs, or other resources within the community.

Factors, such as age, payer type or funding source, socioeconomic status, and lack of awareness of available resources affected the availability of mental health and substance use services (SAMHSA, 2019). Considering the continuous shortage of inpatient psychiatric hospital beds and the continued closures of state hospitals, inpatient care is typically available in a limited capacity to individuals with severe mental or substance use issues and an appropriate diagnosis. Some services provided during inpatient treatment may be available or more affordable if provided on an outpatient basis (SAMHSA, 2019). As previously mentioned, there were 2,257 inpatient psychiatric facilities in 2008, including three types of inpatient psychiatric hospitals and residential treatment centers (SAMHSA, 2018, 2018b, 2018c). As of 2008, there were 225 non-governmental inpatient hospitals, 1,274 general hospitals with psychiatric units, 220 state psychiatric hospitals, and 508 residential treatment centers (SAMHSA, 2018). Access to

beds may become more available if proper referral and linkage to outpatient services is performed as many services offered in psychiatric hospitals are offered at outpatient facilities (Owens et al., 2019). Outpatient care is abundantly available and more affordable in some instances. Outpatient treatment availability can be limited by funding sources, funding variations from state to state, and a rising cost of care due to the expansion of outpatient services. Public payers typically ensure the availability of services to adolescents, adults with severe mental illnesses or serious functional impairments, and elderly adults through Medicaid and Medicare programs (Owens et al., 2019).

A review of the number of un-served individuals with perceived unmet needs demonstrated that socioeconomic and personal issues contribute to the inability to pay for treatment, thereby limiting the availability of services to individuals in need (Owens et al., 2019). Age also plays an important role in the availability of mental health and substance use treatment services. Many programs and funding sources specifically serve, fund, and provide benefits to adolescents and older or elderly adults to increase the availability and access of treatment services to these populations. To ensure efficient service provision and utilization and patient treatment, it is important for administrators to be aware of funding sources and eligibility requirements (Owens et al., 2019).

There are four types of payer sources for healthcare treatment, including private pay, employment, and government (McKillop et al., 2018). There is one additional option for remitting payment for healthcare treatment, which is out of pocket (Moody, 2018). Private pay insurance is an insurance plan that the state or government does not offer

(McKillop et al., 2018). This is an option of insurance a broker or other private company provides. Employment insurance is an insurance plan that is offered through one's employment. This insurance option begins and ends with employment unless the employer submits payment once the insurance ends. Government insurance plans are state run insurance plans that are offered to individuals (McKillop et al., 2018). This includes state run programs, such as the Affordable Care Act plans, Medicaid, and Medicare. Lastly, out-of-pocket cost are also used as a viable option to pay for medical services (Moody, 2018). This is where an insurance plan does not exist, and the individual takes full responsibility for any medical charges incurred. Under each insurance plan, each entity provides a variety of options for selecting insurance plans based on the person's desire, income, or network (McKillop et al., 2018; Moody, 2018).

## Definitions

*Age:* Age refers to the time a person has been alive (Owens et al., 2019). Age was a dependent variable in this study. The age of the individual at the time they enrolled in services was the dependent variable used for this study.

*Inpatient treatment:* Inpatient treatment is defined as continuous medical services received with being admitted for over 24 hours (Owens et al., 2019). The term, "inpatient treatment" was operationalized through variable CTYPE4 of the original dataset, where respondents provided answer to whether hospital inpatient substance use care was offered or not.

*Mental health:* Mental health refers to a person's emotional, psychological, or social well-being, which determines how the person thinks, feels, or acts (Owens et al.,

2019). In this study, mental health was a dependent variable. Mental health included the number of individuals who enrolled in mental health treatment services at any level of care.

*Outpatient treatment:* Outpatient treatment is defined as medical services received without being admitted for over 24 hours (Owens et al., 2019). The term, "outpatient treatment" was operationalized with the variable CTYPE1 from the original dataset, where respondents were asked whether any outpatient substance use care is offered currently. Note that I did not use this variable to discern between different modes of outpatient care that may have been offered, but only whether any was offered or not.

*Payer source:* Payer source is defined as an individual or entity that healthcare invoices are submitted to for payment for services provided. Payer source was operationalized by recoding several variables from the original dataset. These variables were treated as a multiple response set (i.e., they were treated as one multiple-choice question where more than one choice could have been selected). These variables were REVCHK3, REVCHK1, REVCHK8, REVCHK5, REVCHK10, REVCHK15, REVCHK2, REVCHK17.

*Residential services:* Residential services are a group of four or more individuals who live or share a space while receiving care services (Owens et al., 2019). The term, residential services was a dependent variable in this study. The number of individuals who enrolled in residential services accounted for the variable, "residential services."

*Substance use:* Substance use is the excessive use of drugs and alcohol that leads to dependence (Owens et al., 2019). Substance use was an independent variable and

comprised of the individuals that enrolled in treatment for addiction services at any level of care.

## Assumptions

There were four assumptions of this study. The first is that I assumed that secondary data were truthful and accurate. I also assumed that data in the study were a representation of mental health and substance use healthcare administration issues. Even though the selection of the data were secondary and collected from individuals receiving services, it only represented one research site based on those who presented for services. Finally, I assumed the data utilized were actual data collected from the research site and was utilized honestly.

## Scope and Delimitations

This research sought to address the length of stay rates with patients who are diagnosed with mental and substance use disorders are increasing (Owens et al., 2019). This aspect was chosen due to the administrative affects it is having on behavioral healthcare facilities. This problem was the reason the following independent variables: (a) inpatient services, (b) residential, (c) outpatient, (d) age, and (e) payer source and the dependent variables mental health and substance use were studied. The external boundaries of this study included individuals who have received substance use and mental health treatment from the research site. This included inpatient/residential, and outpatient services.

The applied research study's generalizability was influenced by the limits within this research to the agency that participated in the study. This research was limited to

participants within this research site. This study was not generalizable to a larger population as other populations were not included in the sample. While potential limitations were eliminated, some may still exist, such as the time limit of the study.

## Significance, Summary, and Conclusion

Previous published studies conducted by researchers have examined the number of individuals who were receiving care but have not examined this study's independent variables: (a) inpatient, (b) residential, (c) outpatient, (d) age, (e) payer source, and cost on mental health and substance use services. However, it has not examined the impact of these variables on mental health and substance use service. Examining the impact of these variables will allow healthcare administrators to have the data to make administrative decisions regarding behavioral healthcare services. The contributions of this research were to shed light on the scope of the substance use and mental health issue. This research will provide data for healthcare administrators who may seek to make informed decisions regarding how their facilities offer care with decreasing behavioral healthcare professionals (Miller & Farley, 2015). While this study is not indicative of all behavioral healthcare facilities, it allows for the research site to make intentional and informed decisions regarding the limited behavioral healthcare resources of the agency. By conducting this study, the further advances in the field of behavioral health can be made by behavioral healthcare practitioners to recommend viable solutions to decreasing the length of stay through providing holistic treatment to individuals who suffer from behavioral health issues.

In this literature review, I examined areas related to the statistical correlation of the independent variables of the following: (a) inpatient services, (b) residential, (c) outpatient, (d) age, and (e) payer source on the dependent variables of substance use and mental health services. Topics such as mental health, substance use, and cost, including inpatient and outpatient stay, age, payer source, and availability were covered in this literature review. Additionally, I addressed the assumptions and the scope and delimitations. The problem identified in this research was that mental illness and substance use disorders are rising. This research addressed the gap in this study by detailing the rise in patients seeking mental health and substance use services each year, as well as, the availability of services, or the lack thereof. The foundation of the literature provided in this section allowed for me to detail the methodology that was used in this study to analyze the data that will be collected from the research site. The methodology detailed the research design, participants, and procedure for conducting the study.

Section 2: Research Design and Data Collection

## Introduction

The purpose of this quantitative study was to evaluate the association between the following independent variables: (a) inpatient services, (b) residential, (c) outpatient, (d) age, and (e) payer source on the dependent variables of substance use and mental health services. Through a quantitative analysis, I investigated the problem identified in this research, which is that mental illness and substance use disorders are rising. In this section, I will discuss the research methodology, design, and procedures for conducting the research. I will discuss how I conducted the study and analyzed the data

## Research Design and Rationale

I tested whether a significant statistical association exists between the independent variables of inpatient services, residential, outpatient, age, and payer source and the dependent variables of substance use and mental health services. The research design was a quantitative correlational design. Creswell (2012) defined correlational design as a non-experimental study to examine relationships I used a correlational design to examine and answer the research questions from the perspective of the relationship of each of the variables on mental health and substance use. Creswell (2012) contended this methodology will allow researchers to examine if a relationship is present among the variables being studied. Moreover, Creswell (2012) contended a correlational design is appropriate for a non-experimental research study. I examined the relationship of residential, outpatient, payer source, and cost on mental health and substance use services. I did not manipulate the variables and did not randomly assign participants. This

approach was appropriate because I examined the impact of mental illness and substance use as it relates to residential, outpatient, payer source, and cost. Historical data were analyzed; therefore, time and resources were not factors when conducting this research.

Creswell (2012) defined a variable as anything that has a quantity or quality that varies. This research incorporated independent and dependent variables. The dependent variables in this research were mental illness and substance use. Mental illness and substance use were the constants in the research. The independent variables in the research were inpatient and outpatient services, payer source, and cost. All of these variables were dependent upon substance use and mental illness.

## Methodology

I used a quantitative approach to explore the impact of mental illness and substance use. Creswell (2012) described a quantitative methodology as a venue for testing a theory by examining the relationship of the variables. Consequently, I tested the impact of residential, outpatient, payer source, and cost. A quantitative methodology was also the most appropriate because I sought to examine the impact of these variables, which Creswell (2012) suggested for this type of research. A qualitative approach was not appropriate for this study because I did not seek to explore a phenomenon. Instead, I sought to investigate the impact of mental illness and substance use, which advanced the knowledge within the health administration field and allow administrators to better lead organizations. Moreover, I employed secondary numerical data to determine the level of impact on each of the identified variables. I selected this methodology to determine if there is relationship and the level of impact; other methodologies would not be

appropriate because I sought to determine the level of impact. Secondary data were used for this study; therefore, there were no time constraints with implementing this research.

## Population

Secondary and historical data were used; subsequently, there were no participants. I requested and collected the data that were utilized for this study, which SAMHSA cited in Owens et al. (2019); data were obtained directly from the research site's electronic medical records system for 2017 for patients who received substance use and mental health services. The data set included the following: (a) 11,582 mental health patients, (b) 6,466 substance use, (c) 9,697 inpatient, and (d) 8,853 outpatient clients. The number of participants were derived from the alpha value of 0.05, $\chi^2(1)$. These data were provided to the organization based on the clients who presented and were enrolled in treatment services at the research site. This included demographic and treatment data from the research site. I submitted a request for information, excluding identifying information, which was approved. I used secondary data to examine the relationship of the variables, ultimately detailing the impact of mental illness and substance use. The inclusion criteria were those individuals who received treatment for substance use and/or mental health from the research site. Age and race were not a factor in the research. The exclusion criteria were individuals who have a substance use and mental illness and have received treatment, but not at the research site. I collected this data set to examine the variables outlined in this research to determine the impact of substance use and mental health on inpatient stays.

## Sampling and Sampling Procedures

I did not use an instrument tool to collect data for this research. I utilized secondary data to draw conclusions. Further, data were collected from the Agency for Healthcare and Research Quality (AHRQ) database. As a result, there were no testing of an instrument or validation of the tool. Data that were collected and analyzed from the research site included the following: (a) outpatient, (b) inpatient, (c) payer (d) source, and (e) cost. Creswell (2012) suggested the aforementioned process as appropriate to examine the relationship and impact of the variables in the research.

Secondary data were collected from the AHRQ database. Information, including data collected from patients from the research site throughout the course of their treatment, has been stored in the research site's electronic medical record system since AHRQ's inception of providing services. There are strengths and weaknesses when utilizing secondary data. Secondary data provided useful information. Utilizing secondary data saves time and resources as it does not use the traditional methods of data collections from individuals. Additionally, the amount of data for review is usually large (Creswell, 2012). The drawbacks of using secondary data are that the investigator is not able to ask additional or probing questions for clarity of responses or data collected. Additionally, the investigator may be required to cull through data that were not useful or relevant to the research (Creswell, 2012). Secondary data were applicable to this research study because they were collected and analyzed using a correlational design to determine if a relationship exists among the independent variables of residential, outpatient, payer source, and cost for mental health and substance use programs.

A power analysis was important for this experimental design. It was completed prior to conducting research in order to determine the appropriate sample size to be used in the research, with a degree of confidence. I used a Chi-Square test for this research. If *p* is lower than the number, it implies that there is more than 95% probability that future research would replicate the observed differences and they are deemed statistically significant (Fields, 2013). The data set being utilized included 11,582 mental health patients, 6,466 substance use patients, 9,697 inpatient, and 8,853 outpatient clients. To determine if the sample size was appropriate to test the variables, I used the following formulas. The alpha value of $0.05$, $\chi^2(1)$ determined the number of participants.

- $\chi^2$ (1) = 10875.53, $p < .001$ - inpatient
- $\chi^2$ (1) =5678.4, $p < .001$. - 82% outpatient
- $\chi^2$ (33) =3884.12, $p < .001$ – payer source
- $\chi^2$ (16) =1471.38, $p < .001$. - 24-hour inpatient

The variables in this research were statistically significant.

I requested access to the data from the AHRQ via a letter. AHRQ reviewed the letter and provided me with requested data.

## Instrumentation and Operationalization of Constructs

AHRQ data were collected and analyzed using descriptive statistics. This study used Creswell's (2012) definition for descriptive statistics, which is a brief descriptive coefficient that summarize a given data set, which can be either a representation of the entire study or a sample of a population. I used a nominal approach to quantify and analyze the data to determine the impact and relationships, which examined the

impact of residential and outpatient services, payer source, and the cost of services. According to Creswell (2012), a nominal approach allows researchers to measure information numerically; therefore, I used a nominal approach. Finally, I analyzed the quantitative study results to determine the impact of mental illness and substance use.

The process for analyzing the collected study data included first collecting the data. Collected data included information from the research site. I conducted McNemar's Chi-Square test to test the hypothesis. An alpha value of 0.05, $p = .001$ was used to calculate each variable. Consequently, I was able to draw a conclusion based on the data collected to determine the impact of mental illness and substance use.

## Definitions

*Age:* Age refers to the time a person has been alive (Owens et al., 2019). Age was a dependent variable in this study. The age of the individual at the time they enrolled in services was the dependent variable used for this study.

*Inpatient treatment:* Inpatient treatment is defined as continuous medical services received with being admitted for over 24 hours (Owens et al., 2019). The term, "inpatient treatment" was operationalized through variable CTYPE4 of the original dataset, where respondents provided answer to whether hospital inpatient substance use care was offered or not.

*Mental health:* Mental health refers to a person's emotional, psychological, or social well-being, which determines how the person thinks, feels, or acts (Owens et al., 2019). In this study, mental health was a dependent variable. Mental health included the

number of individuals who enrolled in mental health treatment services at any level of care.

*Outpatient treatment:* Outpatient treatment is defined as medical services received without being admitted for over 24 hours (Owens et al., 2019). The term, "outpatient treatment" was operationalized with the variable CTYPE1 from the original dataset, where respondents were asked whether any outpatient substance use care is offered currently. Note that I did not use this variable to discern between different modes of outpatient care that may have been offered, but only whether any was offered or not.

*Payer*: A payer is defined as an individual or entity that healthcare invoices are submitted to for payment for services provided (Owens et al., 2019). Payer is an independent variable. Payer will be measured by the money paid for mental health and substance use services rendered.

*Residential services:* Residential services are a group of four or more individuals who live or share a space while receiving care services (Owens et al., 2019). The term, residential services was a dependent variable in this study. The number of individuals who enrolled in residential services accounted for the variable, "residential services."

*Substance use:* Substance use is the excessive use of drugs and alcohol that leads to dependence (Owens et al., 2019). Substance use was an independent variable and comprised of the individuals that enrolled in treatment for addiction services at any level of care.

## Data Analysis Plan

For this study, I used SPSSS to analyze data. The researcher also uses descriptive statistics. This study used Creswell's (2012) definition of descriptive statistics, which is a brief descriptive coefficient that summarizes a given data set, which can be either a representation of the entire or a sample of a population. I screened and cleaned the data to ensure it only captured data relevant to the independent variables of residential, outpatient, payer source, and cost, which is being analyzed. I removed any data that was not relevant to the variables from the dataset prior to analysis. I quantified and analyzed the data to determine the impact and relationships, which examined the impact of residential and outpatient services, payer source, and the cost of services. I used Creswell's (2012) concept of a nominal approach to measure information numerically. Finally, I analyzed the quantitative study results to determine the impact of mental illness and substance use.

## Research Questions and Hypothesis

The following research questions guided this study:

RQ1: What is the association between "inpatient services, residential, outpatient, age, and payer source" on "substance use services" using the 2017 Substance Abuse and National Mental Health Services Administration survey?

$H_0$: Based on the results, there is no statistical significance between "inpatient services, residential, outpatient, age, and payer source" on "substance use services" using the 2017 Substance Abuse and National Mental Health Services Administration survey.

$H_1$: Based on the results, there is statistical significance between "inpatient services, residential, outpatient, age, and payer source" on "substance use services" using the 2017 Substance Abuse and National Mental Health Services Administration survey.

RQ2: What is the association between "inpatient services, residential, outpatient, age, and payer source" on "mental health services" using the 2017 Substance Abuse and National Mental Health Services Administration survey?

$H_0$: Based on the results, there is no statistical significance between "inpatient services, residential, outpatient, age, and payer source" on "mental health services" using the 2017 Substance Abuse and National Mental Health Services Administration survey.

$H_1$: Based on the results, there is a statistical significance between "inpatient services, residential, outpatient, age, and payer source" on "mental health services" using the 2017 Substance Abuse and National Mental Health Services Administration survey.

## Procedures

Upon approval of this research proposal, I obtained institutional review board (IRB) approval prior to collecting research data. Additionally, I obtained permission from the research site prior to collecting data. Letters of consent were not required as human subjects were not used. I downloaded data from the research site to review and analyze. If sufficient data were not collected, I requested additional data for review and consideration. I conducted data collection and review over a 30-day period. Upon the

expiration of the review period, I analyzed and transcribed the data with the results included in the research.

## Threats to Validity

There were no direct threats to the validity of the data because I obtained data directly from the research site. However, the direct threat that existed was I was dependent upon the research site for the data. I believed the data were accurate, relevant, and current. I tested the raw data variables for their impact on mental illness and substance use. The limits within this research impacted the applied research study's generalizability. This research was limited to data within this research site. This study was not generalizable to a larger population as other populations were not included in the sample. While the researcher attempted to eliminate any potential limitations, there were some that still existed. No other limits that impacted this study. This study did not require client and parental consent. Finally, time was also not a factor in conducting this study and did not impede the progress of the research.

The reliability and validity of the study was ensuring the data were appropriate for use in this research. Additionally, I used valid research procedures outlined for this dissertation. I also made sure to only use data directly from the research site. An extensive literature review and refereed authored publications informed this research. My dissertation committee and the IRB reviewed, approved, and ensured that I followed proper research protocols.

## Ethical Considerations

To maintain the ethical standards of the study, I only utilized the data that was relevant to the study from the research site. I did not use human subjects; therefore, confidentiality and anonymity of participants were not a factor. I secured all documents at all times and saved them on a flash drive that was also secured via password. Data collection did not begin until I obtained IRB approval. I only collected approved data. I stored collected data for 36 months after the study was completed. I then permanently destroyed and deleted the documents from the hard drive of the computer.

## Summary

The purpose of this study was to examine the barriers and the effects of the Health Insurance Portability and Accountability Act (HIPAA) laws which prohibits family members who are serving as mentally ill patients as caregivers from accessing their loved one's medical records. This research employed a quantitative methodology, utilizing a descriptive statistical design. The research utilized secondary data from the research site. The collected data were analyzed and completed using content analysis.

Section 3: Presentation of the Results and Findings

## Introduction

The purpose of this quantitative study was to evaluate the association between the independent variables of inpatient services, residential, outpatient, age, and payer source on the dependent variables of substance use and mental health services. The following research questions and hypotheses were proposed to address this purpose:

RQ1: What is the association between "inpatient services, residential, outpatient, age, and payer source" on "substance use services" using the 2017 Substance Abuse and National Mental Health Services Administration survey?

$H_0$: Based on the results, there is no statistical significance between "inpatient services, residential, outpatient, age, and payer source" on "substance use services" using the 2017 Substance Abuse and National Mental Health Services Administration survey.

$H_1$1: Based on the results, there is statistical significance between "inpatient services, residential, outpatient, age, and payer source" on "substance use services" using the 2017 Substance Abuse and National Mental Health Services Administration survey.

RQ2: What is the association between "inpatient services, residential, outpatient, age, and payer source" on "mental health services" using the 2017 Substance Abuse and National Mental Health Services Administration survey?

$H_0$2: Based on the results, there is no statistical significance between "inpatient services, residential, outpatient, age, and payer source" on "mental health

services" using the 2017 Substance Abuse and National Mental Health Services Administration survey.

$H_1$2: Based on the results, there is a statistical significance between "inpatient services, residential, outpatient, age, and payer source" on "mental health services" using the 2017 Substance Abuse and National Mental Health Services Administration survey.

In this chapter, I focused on the association of the existence of substance abuse services and mental health services on types of facilities, payer source, and programs for younger clients. It consists of four sections. In the first section, I described the data collection procedures. In the second, I evaluated the statistical assumptions. In the third and fourth sections, I examined RQ1 and RQ2, respectively. A summary is provided in the final section.

## Data Collection and Secondary Data Set

I used archival data for this study. The sampling frame for the 2017 National Mental Health Survey included 14,646 facilities across the United States. I mailed surveys and collected data between March 28, 2017 through December 13, 2017 (SAMHSA, N-MHSS 2017 Codebook). A total of 11,582 mental health facilities responded and were included in this study, yielding a response rate of 79%. Of these facilities, 6,466 (55.8%) offered substance abuse services.

## Results

I conducted Chi-Square tests for each of the research questions. First, I assessed the statistical assumptions of the Chi-Square. After I assessed the statistical assumption, I

calculated descriptive statistics and analyses for each research question. In the following section, I first reviewed the statistical assumption. Next, I discussed the descriptive statistics and analyses organized by research question.

**Statistical Assumption**

There is no statistical assumption for Chi-Square tests. First, the data in the categories should be mutually exclusive. Third, each facility can contribute data to only one cell. Fourth, the groups are independent. Finally, no cells should have an expected count of less than one (NIMH, 2018).

I examined independent and dependent variables to determine whether these assumptions were met. With the exception of payer source as described in the previous section, all variables were mutually exclusive and independent. The definition for payer source is creating a single variable with a multiple response set (i.e., they have been treated as one multiple-choice question where more than one choice could have been selected). Doing this would violate the assumption that each facility can contribute data to one and only one cell. Thus, I evaluated payer sources individually.

To test the expected cell counts, cross tabulations of each dependent and independent variable were used to determine if there was an association between the variables. There were no cells with an expected cell count less than one. There were no violations of the statistical assumptions.

**RQ1**

To address RQ1 “What is the association between “inpatient services, residential, outpatient, age, and payer source” on “substance use services” using the 2017 Substance

Abuse and National Mental Health Services Administration survey?" I conducted a series of Chi-Square analyses. To reduce the probability of committing a type I error, I used a Bonferroni adjustment on the level of significance.

A descriptive summary of the independent variables is presented in Table 1. Of the 6,466 facilities offering substance abuse treatment, the majority (82.6%) have outpatient services ($n$ = 5340). Few of the facilities have inpatient services (16.7%) or residential services (14.1%). Approximately half (51%) provide treatment free of charge. The majority of facilities (>70%) accept cash (87.7%), Medicaid (88.3%), private health insurance (84.5%), and Medicare (74%). To a lesser extent, facilities accept federal military insurance (53.4%) and state financed health insurance (61.6%).

Most facilities (65.3%) have programs for clients less than 18 years old. Most of these programs are outpatient services (91%). Approximately 10% of the facilities have programs for inpatient and residential services.

**Table 1**

*Summary of Substance Abuse Facilities*

| Service | *n* (%) |
|---|---|
| Total Substance Abuse Services | 6,466 |
| Inpatient services | 1083 (16.7) |
| Outpatient services | 5340 (82.6) |
| Residential services | 913 (14.1) |
| Payor Source | |
| Free treatment | 3332 (51.5) |
| Cash or self-payment | 5670 (87.7) |
| Medicare | 4787 (74) |
| Medicaid | 5708 (88.3) |
| State financed health insurance | 3986 (61.6) |
| federal military insurance | 3452 (53.4) |
| Private health insurance | 5461 (84.5) |
| HIS/638 contract care funds | 554 (8.6) |
| Under 18 years | 4,225 (65.3) |
| Residential | 406 (9.6) |
| Outpatient | 3843 (91) |
| Inpatient clients | 435 (10.3) |

*Note*. Information in table were extracted from SPSS analysis.

The results of the Chi-Square (see Table 2) show there are significant differences in residential services and outpatient services ($p < 0.001$ for each). Proportionately, there are fewer substance abuse facilities with residential services (45.6%) than facilities without substance abuse services (54.4%). In addition, there were more substance abuse facilities with outpatient services (60.3%) than facilities without substance abuse treatment (39.7%).

**Table 2**

*Association Between Substance Abuse Service Facilities and Types of Service*

| | Facility Offers Substance Use Services | | | |
|---|---|---|---|---|
| | No | Yes | Chi-Square | p-value |
| Inpatient services | | | 2.41 | 0.12 |
| No | 4314 (44.5) | 5383 (55.5) | | |
| Yes | 802 (42.5) | 1083 (57.5) | | |
| Residential Services | | | 103.63 | <0.001 |
| No | 4025 (42) | 5553 (58) | | |
| Yes | 1091 (54.4) | 913 (45.6) | | |
| Outpatient Services | | | 307.23 | <0.001 |
| No | 1603 (58.7) | 1126 (41.3) | | |
| Yes | 3513 (39.7) | 5340 (60.3) | | |

*Note*. df=1 Information in table were extracted from SPSS analysis.

With the exception of Medicaid, all payer sources were significantly different ($p < 0.001$).

Table 3 illustrates that proportionately there were more facilities offering substance abuse services that were free of treatment (57.1% vs. 42.9%), accepted cash (58.6% vs. 41.4%), Medicare (60.3% vs. 39.7%), state financed health insurance (58.9% vs. 41.1%), private insurance (59% vs. 41%) and HIS (63.2% vs. 36.8%).

**Table 3**

*Association of Substance Abuse Services and Payer Sources*

| | Facility Offers Substance Use Services | | | |
|---|---|---|---|---|
| | No | Yes | Chi-Square | p - value |
| Free Treatment to all | | | 24.06 | <0.001 |
| No | 2553 (47.6) | 2816 (52.4) | | |
| Yes | 2506 (42.9) | 3332 (57.1) | | |
| Cash or Self Payment | | | 202.22 | <0.001 |
| No | 1004 (60.1) | 666 (39.9) | | |
| Yes | 4007 (41.4) | 5670 (58.6) | | |
| Medicare | | | 213.3 | <0.001 |
| No | 1838 (54.6) | 1526 (45.4) | | |
| Yes | 3154 (39.7) | 4787 (60.3) | | |
| Medicaid | | | 1.55 | 0.21 |
| No | 466 (42.5) | 630 (57.5) | | |
| Yes | 4574 (44.5) | 5708 (55.5) | | |
| State financed Health Insurance | | | 57.26 | <0.001 |
| No | 1618 (49.1) | 1677 (50.9) | | |
| Yes | 2785 (41.1) | 3986 (58.9) | | |
| Federal Military Insurance | | | 180.66 | <0.001 |
| No | 2393 (50.8) | 2316 (49.2) | | |
| Yes | 2080 (37.6) | 3452 (62.4) | | |

Table 3

*Association of Substance Abuse Services and Payer Sources continued*

| | Facility Offers Substance Use Services | | | |
|---|---|---|---|---|
| | No | Yes | Chi-Square | p - value |
| Private Insurance | | | 191.93 | <0.001 |
| No | 1214 (57.6) | 892 (42.4) | | |
| Yes | 3801 (41) | 5461 (59) | | |
| IHS/638 contract care funds | | | 25.43 | <0.001 |
| No | 3156 (45.8) | 3742 (54.2) | | |
| Yes | 322 (36.8) | 554 (63.2) | | |

*Note*. Information in table were extracted from SPSS analysis.

Of the facilities offering programs for clients younger than 18 years, there are significant differences in the type of facilities (see Table 4). There were proportionately more outpatient and inpatient facilities that offer substance use services than facilities that do not offer substance abuse services (59.2% vs 40.8% and 68.1% vs 38.9%, respectively). Proportionately there were fewer facilities with substance abuse services (43.6% vs. 56.4%).

**Table 4**

*Association Between Facilities Offering Substance Use Services and Types of Facilities Offering Programs for Young Clients*

| | Facility Offers Substance Use Services | | | |
|---|---|---|---|---|
| | No | Yes | Chi-Square | p - value |
| Under 18 years | | | | |
| Residential | | | 74.75 | <0.001 |
| No | 2702 (41.4) | 3819 (58.6) | | |
| Yes | 526 (56.4) | 406 (43.6) | | |
| Outpatient | | | 127.36 | <0.001 |
| No | 577 (60.2) | 382 (39.8) | | |
| Yes | 2651 (40.8) | 3843 (59.2) | | |
| Inpatient clients | | | 36.91 | <0.001 |
| No | 3024 (44.4) | 3790 (55.6) | | |
| Yes | 204 (31.9) | 435 (68.1) | | |

*Note*. Information in table were extracted from SPSS analysis.

**RQ2**

I conducted a series of Chi-Square analyses to address RQ2 “what is the association between “inpatient services, residential, outpatient, age, and payer source” on “mental health services” using the 2017 Substance Abuse and National Mental Health Services Administration survey. I used a Bonferroni adjustment on the level of significance to reduce the probability of committing a type I error.

A descriptive summary of the independent variables is presented in Table 5. A total of 11,582 facilities had mental health services. Of the facilities, the majority (76%) offered outpatient services. Few (<20%) offered inpatient or residential services. Many of the facilities (50%) did not charge a fee for their services. The majority of facilities (>55%) took cash, private health insurance, Medicaid, Medicare, and state health insurance. Few (<50%) took federal military insurance and HIS contract care funds.

**Table 5**

*Demographic Summary of Mental Health Services*

| | *n* (%) |
|---|---|
| Mental Health Services | 11,582 |
| | |
| Inpatient services | 1885 (16.3) |
| Residential services | 2004 (17.3) |
| Outpatient services | 8,853 (76.4) |
| | |
| Payor Source | |
| No charge | 5839 (50.4) |
| Cash/ self-payment | 9677 (83.6) |
| Private health insurance | 9262 (80) |
| Medicare | 7941 (68.6) |
| Medicaid | 10,282 (88.8) |
| State health insurance | 6,771 (58.5) |
| Federal military insurance | 5,532 (47.8) |
| IHS/Tribal | 876 (7.6) |
| | |
| Services for <18 years | 7453 (64.3) |
| Inpatient services | 639 (34) |
| Residential services | 932 (46.5) |
| Outpatient services | 6494 (73.3) |

*Note*. Information in table were extracted from SPSS analysis.

Approximately 64% had services for clients 18 years and younger. The majority of outpatient facilities (73%) included programs for younger clients. Few of the inpatient (34%) and residential (46%) facilities had programs for younger clients.

No statistical associations were found with mental health services. All (100%) of the facilities offered mental health services. Thus, associations between the facilities with mental health services and without mental health services were not assessed.

## Summary

RQ1: What is the association between “inpatient services, residential, outpatient, age, and payer source” on “substance use services” using the 2017 Substance Abuse and National Mental Health Services Administration survey?

If the primary purpose of this research was to examine if there is an association between the availability of substance use services and characteristics of the facilities, then:

1. With the exception of Medicaid there was a significant association between the payer sources and the offering of substance abuse services.
2. With the exception of inpatient services, there was a significant association between type of services and facilities offering substance abuse services.
3. Of the facilities that offer programs for young clients, there were significant associations between types of facilities and facilities offering substance abuse services.

RQ2: What is the association between “inpatient services, residential, outpatient, age, and payer source” on “mental health services” using the 2017 Substance Abuse and National Mental Health Services Administration survey?

If the primary purpose of this research study was to examine the relationships between the availability of mental health facilities and types of services, payor source, and programs for young clients, then:

1. The focus of this study was comparing facilities with mental health facilities with facilities without mental health facilities. All (100%) of the facilities offered mental health services. There were no associations between the availability of mental health
2. To examine the relationships between the availability of mental health facilities and types of services, payor source and programs for young clients, additional data on the types of mental health services is needed.

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

## Introduction

The purpose of this study was to evaluate the association of the following independent variables: (a) inpatient services, (b) residential, (c) outpatient, (d) age, and (e) payer source on the dependent variables substance use and mental health services. Owens et al. (2019) suggested that researchers examine how to improve the growing number of mental health and substance use cases. Subsequently, this study showed the impact of mental illness and substance use, including the levels of care and the cost associated with it. The study also demonstrated the services offered in each level of care to the person's affected by mental illness and substance use.

SAMHSA (2018) provided historical secondary data for this study. For this study, there were 11,582 mental health patients, 6,466 substance use patients, 9,697 inpatient, and 8,853 outpatient clients. I studied the following independent variables: (a) inpatient services, (b) residential, (c) outpatient, (d) age, and (e) payer source as well as the dependent variables of substance use and mental health services. I analyzed data using McNemar's Chi-Square Test to measure inpatient and residential programs and Fisher's exact test measure age and payer source.

## Interpretation of the Findings

There were two research questions for this study:

RQ1: What is the association between “inpatient services, residential, outpatient, age, and payer source” on “substance use services” using the 2017 Substance Abuse and National Mental Health Services Administration survey?

RQ2: What is the association between “inpatient services, residential, outpatient, age, and payer source” on “mental health services” using the 2017 Substance Abuse and National Mental Health Services Administration survey?

The results suggest there were significant differences in residential and outpatient services. There were approximately 55% of residential facilities that did not offer residential services versus those that do. However, there were also approximately 60% of outpatient services that provide substance use services than those that do not. Within the substance use and mental health service offerings, there are different levels of care. Upon a client being assessed for services, the client may enter outpatient services first, residential services next, and then impatient services (Owens et al., 2019). Some facilities offer substance use, others mental health, and some offer both services. The licensing and accrediting body determines if a facility may offer substance use or mental health services. The difference between outpatient and residential services is that outpatient services are offered to patients where they can continue their normal routine without major disruption to their lives (HHS, 2010; NASMHPD, 2017; SAMHSA, 2018). These patients can continue school, work, and other life activities while receiving treatment. Residential services mandate a disruption to the client’s life. The client is required to enroll in services where they live in places such as a halfway house or residential facility for the duration of their treatment ((HHS, 2010; NASMHPD, 2017; SAMHSA, 2018).

This is in an effort to get the client to focus solely on treatment. Within a residential setting, the facility dictates the daily activities of their life during their enrollment.

In the facilities that offered substance use services, they were being offered free of charge to the client. This means the client did not incur charges themselves for the services provided. The facilities were able to provide these services as a result of having a payor source, which could include Medicaid or another state program. Medicaid paid for 58% of services provided for individuals who presented for treatment at the research site. While the data showed that clients received an abundance of free services, it should be noted that each of the payor source Medicaid, cash or self-pay, state financed health insurance, and private insurance resulted in over 50% of payment in their perspective funding source. While there are many funding payer sources for client substance use and mental health services, Medicaid is the single largest payer for mental health services and states or state plans are the largest payer for substance use services (SAMHSA, 2017). Both payer sources offer payment for services for both adults and adolescents (SAMHSA, 2017).

Of the facilities offering programs for clients younger than 18 years, there are significant differences in the type of facilities. The data demonstrated that there were more outpatient and inpatient facilities that offered substance use services opposed to those that did not. There were fewer facilities with substance abuse services. However, both outpatient and inpatient facilities offered services to adolescents and adults (SAMHSA, 2017). SAMHSA outlines that their substance use services offered are more robust compared to other services.

## Limitations

Limitations of this study included generalizability, which only extended to the one agency that participated. This research was limited to the participants within this research site. This study is not generalizable to a larger population as other populations were not included in the sample. While potential limitations were eliminated, some may still exist, such as the time limit of the study.

The limitations of this study included utilizing secondary and historical data. These data were limited to data collected in 2018 by the research site. Another limitation included data that was two years old. Other limitations included data that were isolated to the research site in one geographical location. Additionally, the electronic medical records system could not be validated, moreover, the secondary data itself could not be validated, and its origin could not be confirmed.

## Recommendation

Previously, researchers have examined the number of individuals who are receiving mental health and substance use care but have not examined the this study's independent variables of inpatient, residential, outpatient, age, payer source, and cost on mental health and substance use services. Scholars have not examined the impact of these variables on mental health and substance use service. Examining the impact of these variables will allow healthcare administrators to have the data to make administrative decisions regarding behavioral healthcare services. The contributions of this research will be to shed light on the scope of the substance use and mental health issue. This study will be added to the body of research that healthcare administrators use to make informed

decisions regarding the care offered by their facilities with decreasing behavioral healthcare professionals (Miller & Farley, 2015). While this study is not indicative of all behavioral healthcare facilities, it will allow the research site administrators to make intentional and informed decisions regarding the limited behavioral healthcare resources of the agency. With this research, it is my hope to further advance the field of behavioral health. Findings from this study can be used to recommend viable solutions to decrease the length of stay and reduce the cost of services through providing holistic treatment to individuals who suffer from behavioral health issues.

**Implications for Professional Practice and Social Change**

Substance use and mental health is not a new phenomenon. Scholars have discussed the importance of services in terms of the dangers, increase in use, or the need for more availability (SAMHSA, 2019a). Mental health and substance use have major implications within U.S. society. The increase in the need for mental health and substance use increases the need for availability. The increase need for availability may have implications on the increase in the cost of services. This study may provide the foundation necessary to create the opportunities for more treatment availability and the cost-effective services. Treatment providers may use this study's details, such as quantitative data, to analyze and assess their organization's capability, ability to provide services, cost of services, and payer source to create and implement qualitative performance measures that allow administrators to make informed decisions regarding the care of their patients served. Currently, media outlets highlight mental health and

substance use, or the lack thereof, including the causes, needs, or lack of availability and services (Malla et al., 2015).

## Conclusion

I researched inpatient stays involving mental illness and substance use disorders. Given the intensity of mental health and substance use, it is important for administrators to examine the impact on healthcare facilities. Administrators are experiencing a surplus of substance use and mental health clients, which is resulting in the lack of treatment services needed to assist individuals (Malla et al., 2015). Furthermore, the length of stay with patients who are diagnosed with mental health and substance use disorders are increasing (Owens, et al., 2019). As a result of this, this topic was explored to understand the effects of behavioral health services on healthcare organizations and administrators. I also examined those factors associated with mental health and substance use services and how they shape the decisions regarding level of care, age, and payer decisions for healthcare administrators.

The majority of the clients treated received outpatient services. Of those facilities, only a few of them offer inpatient or residential services. While other forms of payments are used, Medicaid is the single majority payer of choice. Of the facilities, data was collected from the majority of the facilities offer services to adolescents as well as adults. The majority of the facilities offer outpatient services and less offer residential services. There were also fewer facilities with substance use services compared to mental health. Most importantly, the facilities themselves did not charge for the services provided.

Instead, they were paid by other payor services such as Medicaid, state insurance plans or self-pay.

# References

Ashok, M., Ridha, J., Amparo, G. (2015). Mental illness is like any other medical illness: A critical examination of the statement and its impact on patient care and society. *J Psychiatry Neurosci*. *40*(3), 147-150. https://doi:10.1503/jpn.150099

Cherry, D., Albert, M., & McCaig, L.F. (2018, June). *Mental health-related physician office visits by adults aged 18 and over: United States, 2012-2014*. National Center for Health Statistics. https://www.cdc.gov/nchs/products/databriefs/db311.htm#ref2

Centers for Medicare & Medicaid Services (CMS) (2012, March 26). *Emergency medical treatment & labor act (EMTALA)*. https://www.cms.gov/regulations-and-guidance/legislation/emtala/

Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research.* (4th ed.). Pearson.

Donabedian, A. (1988). The quality of care: How can it be assessed? *JAMA, 260*(12), 1743-8.

Donabedian, A. (2005). Evaluating the quality of medical care. *The Milbank Quarterly, 83*(4),691-729. https://improvement.nhs.uk/documents2135/measuring-quality-care-model.pdf https://doi:10.1111/j.1468-0009.2005.00397.x.

Gunnels, J. A. L. (2019). *Family estrangement and hospital readmission rates among severely mentally ill adults* (Doctoral dissertation, Antioch University).

Helmicki, S. (2017). *Evolution and devolution of inpatient psychiatric services: From asylums to marketing madness and their impact on adults and older adults with severe mental illness*. https://digital.library.unt.edu/ark:/67531/metadc984274/m2/1/high_res_d/HELMICKI-DISSERTATION-2017.pdf

Henry J. Kaiser Family Foundation (2017). *Facilitating access to mental health services: A look at Medicaid, private insurance, and the uninsured* [Pdf file]. http://files.kff.org/attachment/Fact-Sheet-Facilitating-Access-to-Mental-Health-Services-A-Look-at-Medicaid-Private-Insurance-and-the-Uninsured

Heslin, K. C., Elixhauser, A., & Steiner, C. A. (2006). Hospitalizations involving mental and substance use disorders among adults, 2012: statistical brief# 191. *Healthcare Cost and Utilization Project (HCUP) statistical briefs. Rockville: Agency for Healthcare Research and Quality (US)*.

Lavoie, J. G., Ward, A., Wong, S. T., Ibrahim, N., Morton, D., O'Neil, J. D., & Green, M. (2018). Hospitalization for mental health related ambulatory care sensitive conditions: what are the trends for First Nations in British Columbia?. *International Journal for Equity in Health*, *17*(1), 156.

McKillop, C. N., Waters, T. M., Kaplan, C. M., Kaplan, E. K., Thompson, M. P., & Graetz, I. (2018). Three years in changing plan features in the US health insurance marketplace. *BMC Health Services Research*, *18*(1), 450.

Miller, B. F. and Farley, E. S. (2015). *Seamlessly integrating behavioral health [PDF file]*. High-Need, High-Cost Patients: The Role of Behavioral Health. https://www.allhealthpolicy.org/wpcontent/uploads/2016/12/MILLERPRESENTATION_FV.pdf

Moody, J. (2018). *Health insurance - options for one of American's most dangerous populations*. AgFuse. https://agfuse.com/article/health-insurance---options-for-one-of-america-039-s-most-dangerous-occupations

Moore, L, Lavoie, A, Bourgeois, G, Lapointe, J. (2015). Donabedian's structure-process-outcome quality of care model: Validation in an integrated trauma system *Journal of Trauma and Acute Care Surgery, 78*(6), 1168-1175. https://doi:10.1097/TA.0000000000000663

Naeger, S. (2017). Emergency department visits involving underage alcohol misuse: 2010 to 2013. In *the CBHSQ Report*. Substance Abuse and Mental Health Services Administration (US).

National Association of State Mental Health Program Directors (NASMHPD) (2017). *Assessment 10: Trends in psychiatric inpatient capacity, United States and each state, 1970 to 2014* [PDF file]. https://www.nri-inc.org/media/1319/tac-paper-10-psychiatric-inpatient-capacity-final-09-05-2017.pdf

National Institute of Mental Health Statistics (NIMH) (2018). *Mental health information: Statistics*. https://www.nimh.nih.gov/health/statistics/index.shtml

National Institute on Drug Abuse (NIDA) (2011) *Drug-related hospital emergency room visits*. Substance Abuse and Mental Health Administration. https://www.drugabuse.gov/publications/drugfacts/drug-related-hospital-emergency-room-visits

Noblin, J. L. (2011). *Patient length of stay: Predictive variability among forensic and civil psychiatric units and populations*. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.838.286&rep=rep1&type=pdf

Nguyen, T. Hellebuyck, M., Halpern, M. & Fritze, D. (2018). *Mental health America: The state of mental health in America 2018.* Mental Health America. [PDF file]. https://www.mentalhealthamerica.net/sites/default/files/2018%20The%20State%20of%20MH%20in%20America%20-%20FINAL.pdf

Owens, P. L.,. Fingar, K. R., McDermott, K. W., Muhuri, P. K., & Heslin, K. C. (2019). Inpatient stays involving mental and substance use disorders, 2016: Statistical brief #249. Healthcare Cost and Utilization Project (HCUP) Statistical Briefs [Internet]. Agency for Healthcare Research and Quality (US). https://www.ncbi.nlm.nih.gov/pubmed/31063293

Park-Lee, E., Lipari, R. N., Hedden, S. L., Kroutil, L. A., & Porter, J. D. (2017). Receipt of services for substance use and mental health issues among adults: Results from the 2016 National Survey on Drug Use and Health. In *CBHSQ Data Review*. Substance Abuse and Mental Health Services Administration (US).

Polits, M. (2016). *Factors that affect recidivism for psychiatric patients in the emergency department*. https://digitalcommons.georgefox.edu/cgi/viewcontent.cgi?article=1216&context=psyd

SAMHSA. (2014). *Projections of national expenditures for treatment of mental and substance use disorders, 2010-2020*. HHS Publication No. SMA-14-4883. https://store.samhsa.gov/system/files/sma14-4883.pdf

SAMHSA. (2016). *DSM-5 Changes: Implications for child serious emotional disturbance*. [Table 9, DSM-IV to DSM-5 Major Depressive Episode/Disorder Comparison]. https://www.ncbi.nlm.nih.gov/books/NBK519712/table/ch3.t5/

SAMHSA. (2018a). *Results from the 2017 national survey on drug use and health: Detailed tables*. https://www.samhsa.gov/data/sites/default/files/cbhsqreports/NSDUHDetailedTabs2017/NSDUHDetailedTabs2017.htm#to

SAMHSA. (2018b). *Mental health annual report: 2016 use of mental health services: National client-level data.* [PDF File]. https://www.samhsa.gov/data/sites/default/files/2016_mental_health_annual_report.pdf

SAMHSA. (2018c). *Key substance use and mental health indicators in the United States: Results from the 2017 national survey on drug use and health* (HHS Publication No. SMA 18-5068, NSUDH Series H-53). https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/NSDUHFFR2017/NSDUHFFR2017.pdf

SAMHSA. (2018d). *2017 National survey on drug use and health: Methodological summary and definitions*. https://www.samhsa.gov/data/report/2014-national-survey-drug-use-and-health-methodological-summary-and-definitions

SAMHSA. (2018e). *National mental health services survey (N-MHSS): 2017 data on mental health treatment facilities*. https://wwwdasis.samhsa.gov /dasis2/nmhss/2017_nmhss_rpt.pdf

SAMHSA. (2019b). *Substance abuse and mental health block grants*. https://www.samhsa.gov/grants/block-grants

SAMHSA. (2017). *Funding and characteristics of single state agencies for substance abuse services and state mental health agencies, 2015*. HHS Pub. No. (SMA) SMA-17-5029. Retrieved from https://store.samhsa.gov/system/files/sma17-5029.pdf

SAMHSA. (2019a). *Behavioral health spending & use Accounts 2006-2015*. HHS Pub. No. (SMA) 19-5095. Retrieved from https://store.samhsa.gov/system/files/bhsua-2006-2015-508.pdf

Spear, S. E. (2012). *Coordination of care in substance abuse treatment: An interorganizational perspective* (Doctoral dissertation).

Thull, J. A. (2009). *Client characteristics and treatment retention in an outpatient drug-free chemical dependency program* (Doctoral dissertation).

Tracy, N. (2015). *Types of mental health facilities*. Healthy Place. https://www.healthyplace.com/other-info/mental-illness-overview/types-of-mental-health-facilities

U.S. Department of Health and Human Services (HSS). (2010). *Behavioral health providers: Expenditures, methods and sources of payment, electronic health record incentive payments for certain behavioral health providers policy descriptions.* [PDF file]. https://aspe.hhs.gov/system/files/pdf/76206/behhp.pdf

Vazquez, R. D. (2015). *Evaluating overall success and relative influence of different treatment services in substance use treatment* (Doctoral dissertation).