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Disparities in Mental Health Telehealth Services Between 2020 and 2022 in North Central California

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This is to certify that the doctoral study by

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Walden University
2023

Abstract

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Doctoral Study Submitted in Partial Fulfillment

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Doctor of Healthcare Administration

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Abstract

The digital divide persists despite the advancement of telehealth services for patients receiving behavioral health care. This disparity remains unaddressed and represents a gap in health care for patients who struggle to connect with their providers. The purpose of this quantitative study was to address the disparities of telehealth services among patients seeking behavioral health care in rural and urban areas during 2020–2022 in California. This study, grounded in the Donabedian theory, was guided by three research questions in which the dependent variables were wait time, patient preference, and patient satisfaction, whereas the independent variables were encounter type and location. A quantitative methodology with an experimental design was used to examine the data compiled from the Nextgen Electronic Health Record system and AZARA Healthcare system for 149 participants. Data were analyzed using SPSS to determine associations among variables. The overall model ANOVA was not statistically significant, indicating no association between behavioral health telehealth encounter type visit and wait time for appointment and between telehealth follow up for behavioral health and patient satisfaction. However, patient encounter location was associated with patient satisfaction. These findings indicate the relevance of fairness and accessibility in telehealth deployment in influencing patient satisfaction in diverse locales. The study contributes to positive social change by improving the telehealth services for all patients by implementing training programs to screen patients successfully so providers can have successful visits and improve overall patient satisfaction.

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Dedication

I dedicate this study to every student who doubts their abilities of fulfilling their dreams. Hold on to them. They are about to turn real. Stay true to yourself and most of all, believe in your dreams.

Acknowledgments

I would like to thank my Mother for believing in me endlessly and never giving up on me. She helped me persevere even during the hardest times. I was also supported by my beloved Father who was kind and encouraging, but my Mother has been my rock throughout this entire process. I would also like to thank my loving siblings and dearest husband for their patience during this venture.

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Section 1: Foundation of the Study and Literature Review

Introduction

Healthcare provided via telehealth has become increasingly more prevalent in recent years. Telehealth services are defined as "the use of electronic information and telecommunication technologies to support long-distance clinical health care, patient and professional health-related education, administration, and public health" (Karimi et al., 2022, p. 1). During the COVID-19 pandemic, the use of telehealth services increased markedly among the primary care providers and some specialties by almost 154% in 2020 compared to 50% in 2019. Telehealth services increased during this period including audio/video visits, new and follow-up patient care via telehealth, phone visits, and remote monitoring of patients with chronic diseases such as heart disease and diabetes (Koonin et al., 2020).

The aim of this study was to provide a better understanding of the challenges of telehealth for patients residing in rural and urban areas in Yolo and Sacramento counties in the state of California between 2020 and 2022. Despite expanded use of telehealth services, especially for behavioral health patients, patient satisfaction is low, and preference for in-person care is high. Data collected in this study indicate that factors might be impacting patients' viewpoints regarding telehealth services. Other aspects explored in this study include concerns over patient location, type of telehealth visit, and patient satisfaction with and preference for the visit. The findings of this study have potential implications for positive social change, such as access to telehealth services can increase if patients are screened before booking an appointment to identify the type of

appointment best suited for their needs, which could lead to more kept appointments and a decrease in no-shows. The screening could help decrease disparities between rural and urban patients, ensuring equity in services and care provided to all patients.

Background

Telehealth was not widely used before the COVID-19 pandemic. The service was used to perform remote monitoring or offering audio visits to patients living in distant rural areas (Johnson et al., 2021). Due to the risks of COVID-19, the dynamic of healthcare shifted regarding delivery of care, and providers started incorporating more telehealth services. COVID-19 is a disease caused by the SARS-CoV-2 virus. COVID-19 causes cold-like symptoms but can be severe in patients with underlying chronic conditions or those who are immunocompromised (CDC, 2023). Due to these risks, many healthcare providers transitioned from in-person care to video/audio or other types of telehealth visits (Osofsky et al., 2020).

The main challenges with telehealth visits include increasing access to patients by improving scheduling and training providers on how to conduct optimum telehealth care to increase patient satisfaction (Garcia-Huidobro et al., 2020; Kho et al., 2020). Another challenge is that many specialties, such as pediatrics, surgery, and women's health, lack the capacity to offer telehealth services, and increasing telehealth care in those departments remains a challenge (Houser et al., 2022). The behavioral health department at the study site organization had a successful outcome regarding the telehealth visits compared to the other fields of healthcare.

My aim for this study was to better understand how access to telehealth can be improved for behavioral health providers and patients. In this study, I used the Donabedian theory, a framework that builds on the characteristics of structure, process, and outcome of any issue. This theory served as a useful model in understanding how telehealth visits could be improved for patient satisfaction for behavioral health and other departments in the study site organization.

Problem Statement

Challenges in the delivery of mental health services via telehealth services during the COVID-19 pandemic caused a digital divide among patients. Several providers have expressed concerns about the disruption that telehealth services caused in their practice; they could not connect with patients physically, several distractions caused delays in patient care delivery, and patients were concerned their health issues were not being addressed appropriately (Clare, 2021). The problem for this study is the challenge of telehealth services among behavioral health patients in rural and urban areas during 2020–2022 in Yolo/Sacramento Counties.

The digital divide caused by telehealth services in different practices highlights a gap in patient care. Before the COVID-19 pandemic, patients could walk in or have more in-person visits as use of telehealth services was minimal (Schoebel et al., 2021). As the pandemic soared in 2020 through 2022, more practices started to switch to telehealth services. One department that made such an access highly available was behavioral health. The therapists, behavioral health providers, and mental health counselors wanted to provide care to patients across the organization and offer telehealth visits through

various modalities such as audio, video, telephone, and remote monitoring. Even though this shift in modality increased access to care, patient satisfaction rates were not as high, and many patients preferred being seen in person (Karimi et al., 2022). The increasing preference for in-person care makes care delivery more difficult for providers who are offering services from a location different from the patient. For example, a behavioral health provider could reside in southern California whereas the patient could be in Yuba City, California. Although telehealth increased patient access to care, many patients remain disconnected from providers due to a lack of human connection in telehealth, connectivity issues, a lack of privacy at home, or feeling rushed about their visit and leaving not fully satisfied (Bouabida et al., 2022).

To overcome these challenges, healthcare administrators must implement structures for improving telehealth services (Hilty et al., 2020). All providers should receive proper and consistent training and equipment to render these services. In addition, all patients must follow the same process of screening to determine whether they know how to connect to a telehealth visit, have the right equipment, and are aware of the kind of telehealth visit they want (Berwick & Fox, 2016). With these changes, improved outcomes can be achieved, including patients keeping doctor appointments and a decrease in patient issues.

Purpose of the Study

The purpose of this quantitative study was to explore the correlation between behavioral health patients residing in rural versus urban areas in Yolo/Sacramento counties based on their telehealth service rate during 2020–2022. My goal for this study

was to analyze the dependent variables, which included wait time for behavioral health telehealth visits, patient preference, and patient satisfaction. I measured wait time as a nominal variable, with values of <1 month or >1 month and patient satisfaction as a ratio variable and analyzed it as a percentage. I also measured patient preference as a nominal variable with values of *in person* and *telehealth*. The independent variables for this study were encounter type and encounter location. I measured both independent variables as nominal variables. Furthermore, the values for encounter type were telehealth follow up, audio-only visit, behavioral health telehealth, behavioral health telehealth established, behavioral health telehealth new, OTTO, and OTTO follow up. OTTO is a virtual platform integrated into Nextgen EHR for Telehealth visits. The values for encounter location were rural (FQHC Linda Clinic 95901 and FPQH Colusa Clinic 95993) and urban (FQHC Sacramento Clinic 95835).

The purpose of this study was to understand the challenges of telehealth services in behavioral health patients residing in rural and urban areas during 2020–2022 in California based on analysis of the study's dependent and independent variables. My aim was to configure changes that could be made to improve patient care for behavioral health patients via telehealth services in the future.

Research Questions and Hypotheses

The research questions are framed to explain the correlation between telehealth service and urban/rural patient population residing in urban/rural areas within California between 2020 and 2022. The specific research questions and hypotheses are:

RQ1: Is there an association between behavioral health telehealth encounter type visit for behavioral health services and wait time for appointment in rural areas in California between 2020 and 2022?

$H_0$1: There is no association between the behavioral health telehealth encounter type visit for behavioral health services and wait times in rural areas in California between 2020 and 2022.

$H_1$1: There is an association between the behavioral health telehealth encounter type visit for behavioral health services and wait times in rural areas in California between 2020 and 2022.

RQ2: Is there an association between telehealth follow up for behavioral health visits and patient satisfaction in urban areas in California between 2020 and 2022?

$H_0$2: There is no association in telehealth follow up for behavioral health visits and patient satisfaction in urban areas in California between 2020 and 2022.

$H_1$2: There is an association in telehealth follow up for behavioral health visits and patient satisfaction in urban areas in California between 2020 and 2022.

RQ3: What is the association between encounter location for behavioral health telehealth services and patient preference of service in rural areas and urban areas in California between 2020 and 2022?

$H_0$3: There is no association between encounter location and patient preference of services in rural and urban areas in California between 2020 and 2022.

$H_1$3: There is an association present between encounter location and patient preference in rural and urban areas in California between 2020 and 2022.

Theoretical Framework

The Donabedian theory has been used to evaluate quality of healthcare using components of structure, process, and outcomes (NHS Improvement, 2005). The theory is important for understanding a patient's ability to determine and understand the level of telehealth access available and how healthcare services can make such resources easily attainable. I used this theory in this study as a framework for understanding how the structure, process, and outcome, as well as governance and management, would result in increased use of telehealth services by patients living in both rural and urban areas (Berwick & Fox, 2016).

The Donabedian theory includes the concepts of structure, process, and outcome. I used these concepts to ask clear questions about the current structure of telehealth. For the data set provided, the behavioral health patients currently receive various modalities of telehealth services, mainly via audio, video, and telephone call (NHS Improvement, 2005). My approach to process was to see if all patients, before being scheduled for telehealth, were being screened regarding bandwidth and ability to answer a video call through their phone or computer. Another question for process was whether patients know the difference between a telephone and video visit. The same question arose for training purposes for the provider.

To analyze the outcomes, I used a successful visit, which is when a patient can check in in a timely manner and have no issues with eligibility or the call goes through in its entirety. Another measure of successful visit was to see how many patients keep their appointments after they wait for less or more than 1 month. Also, given the duration or

the location, how satisfied are patients with telehealth service for behavioral health? All three components relate to the questions by expanding all these situations to best understand if telehealth services are provided for rural, urban, or both populations. Healthcare administrators have used the Donabedian theory to cause a rapid shift from in-patient visits to telehealth services by implementing a structure that has led to improved care from provider and patient standpoints. Administrators have also implemented processes that make it easier to carry out services and used outcomes, which resulted in a significant decrease in the spread of infections and mortality and an improvement in the quality of care as an outcome (Binder et al., 2020).

Nature of the Study

For the current study, I used quantitative data from the FQHC Organization, an FQHC-based community clinic located in California (Pick Peach, 2023). The clinic serves patients mostly from rural areas and some from an urban population. Additionally, I used a narrative approach to represent and analyze individual literature for a decisive conclusion. Hence, the quantitative approach was most appropriate to meet the goal of the research. The purpose of this study was to understand the correlation between the influence of telehealth services being accessed by patients residing in rural and urban areas during 2020–2022.

The dependent variables for this study were wait time for behavioral health telehealth visits, patient preference, and patient satisfaction. I measured wait time as a nominal variable, with values of <1 month or >1 month, patient satisfaction as a ratio variable and analyzed it as a percentage, and patient preference as a nominal variable

with values of *in person* and *telehealth*. The independent variables were encounter type and encounter location. I measured both independent variables as nominal variables. Values for encounter type were telehealth follow up, audio only visit, behavioral health telehealth, behavioral health telehealth established, behavioral health telehealth new, OTTO, and OTTO follow up. The values for encounter location were rural and urban.

The data set used in this study was from the NextGen Electronic Health Record at FQHC Organization (Pick Peach, 2023). The health information technology team at the project site provided the data upon my request. I retrieved the data set specifically for the behavioral health practice for 2020 to 2022. The data included person-level characteristics, such as medical record number and race (American Indian/Alaska Native, Black/African American, White, more than one race, Pacific Islander, Asian, and unreported/refused to report race). Another category included ethnicity, which included non-Hispanic/Latino, Hispanic/Latino, and unreported/refused. I also collected data regarding primary language (English or Spanish), gender (female or male), age (18–84 years), date of birth for individual patients, Medicaid number, date of appointment, encounter date, wait time for appointment (<1 month or >1 month), encounter type, encounter location, patient satisfaction (ranging from 0 to 100%), and preferred visit between telehealth and in person. I analyzed all these data using Statistical Package for Social Science (SPSS) to understand the relationship between behavioral health telehealth services and patient satisfaction and the preferred visit for patients living in rural/urban areas in California between 2020 and 2022.

Literature Search Strategy

The study was conducted to help address the digital divide among the behavioral health patients living in urban and rural areas in California during 2020–2022. A digital divide exists between patients living in urban and rural areas. This disparity is based on differences in socioeconomic status and education. This divide existed before 1990 when challenges of internet started to emerge (Clare, 2021). In the current study, I examined whether telehealth services improved access to healthcare for behavioral health patients living in rural or urban areas during the COVID-19 pandemic. Disparity in telehealth access is a social issue as not every patient has the same level of technological access for their healthcare needs.

The key concepts of telehealth are live video, store and forward, remote patient monitoring, and mobile health. This discipline is being used for various populations to increase their access not only to primary care and behavioral health but also to chronic disease management and monitoring, diagnostic and monitoring services, dental, physical, occupational health, and even home health (Center for Connected Health Policy, 2023). When the novel coronavirus emerged in 2019, providers' face-to-face interactions with patients had to be significantly reduced to decrease or control the virus's spread. Telehealth was the safest modality to monitor patients' physical and mental health and continue providing services. Telehealth boosted access to behavioral health from 1% in February 2020 to 20% in March and 53%–59% in April 2020, and the numbers have remained high (Mulvaney-Day et al., 2022). Telehealth services are

growing rapidly and will continue to grow because of the benefits of convenience, comfort, and reduced cost of patient care.

Studies have shown that 24% of adults with household incomes below $30,000 per year do not own a smartphone, and 40% of those in lower-income groups do not have home broadband and computer services (Hanna, 2021). Decreased internet connectivity, a lack of Wi-Fi, and an inability to properly conduct a telehealth visit with full capacity, especially among communities of color, underserved, and people living in poverty, can have a great impact on social factors (Clare, 2021). For this study, I searched various databases to understand the challenges and to discuss how to effectively overcome these barriers to improve patient care. The keywords I used to search for literature were *telehealth, telehealth in states of the United States, Medicaid and CHIP population, telemedicine, COVID-19 telehealth services, different types of telehealth services, tele stroke, remote patient monitoring,* and *audio/video calls*. I used these keywords to search the following websites for literature published between 2005 and 2022: Millbank Quarterly, Journal of Emergency Nursing, which contains studies on the Donabedian theory, Journal of Medical Internet Research, California Telehealth Resource Center, Commonwealth Fund Organization, Office of Health Policy, Morbidity Mortality Week Report, National Center for Chronic Disease Prevention and Health Promotion, National Healthy Survey (NHS) Improvement, Psychological Trauma Journal, and Health Resource & Services Administration (HRSA).

Scope of Literature

COVID-19 Pandemic

Koonin et al. (2020) stated that telehealth had been a part of healthcare worldwide for some time before the pandemic, but barriers had to be overcame quickly to sustain access to patient care during the pandemic. COVID-19 is caused by the SARS-COv-2 virus. This viral respiratory illness impacts patients of all ages. Patients with severe underlying conditions and immunocompromised patients were at a higher risk of contracting COVID-19. Since first diagnosed in 2019, COVID-19 has affected millions of people, including causing hospitalization of more than 3,000 patients per week with more than 200,000 new cases reported on a weekly basis (Centers for Disease Control and Prevention, 2023).

Patients with COVID-19 presented with symptoms of high fever, cough, runny nose, nausea and vomiting, severe body aches, and dehydration. Many patients experienced shortness of breath and exacerbated episodes of asthma and bronchiolitis. Several patients were not able to visit clinics or hospitals due to restrictions imposed to curb the spread of COVID-19 or due to the debilitating effects of the disease. In addition, the fear of being infected by the virus discouraged many patients from coming to clinic. When the COVID-19 pandemic started, vaccines were not available and patients lacked immunity against the virus and were at a higher risk of exposure, which also increased the risk of severe complications and even death. COVID-19 pandemic spread rapidly throughout the world from late 2019 and continues to affect people today. To minimize exposure, practices turned to offering services that were contactless. Telehealth was the

preferred method of patient services and engagement during the COVID-19 pandemic (Canadian Radio-television and Telecommunications Commission [CRTC], 2022). Patients appreciated the shift in modality to accommodate them, so they still had access to their providers and did not have to wait to obtain care.

Telehealth services have existed in healthcare since the late 1900s but were previously not as popular as today; patients preferred face-to-face contact with their providers. Patients felt more connected and comfortable in the physical presence of their providers. During the COVID-19 pandemic, this connection had to occur via telehealth services to ensure uninterrupted patient care delivery and to control COVID-19 spread as much as possible (U.S. Department of Health and Human Services, 2022). Telehealth before the COVID-19 pandemic was available but was limited. Telehealth has now been adopted as an everyday practice, and providers can support patients from different areas.

For the study site organization in California, providers can now be located at different locations, and patients can speak to them from a distance without having to travel 1–2 hours or more. These appointments are being scheduled on a regular basis for behavioral health practices, and patients can stay connected with their provider. The expansion of this service has also allowed providers to work from the convenience of their homes while being able to provide services to patients located in distant areas.

Types of Telehealth

Telehealth services are defined as “the use of electronic information and telecommunication technologies to support long-distance clinical health care, patient and professional health-related education, administration, and public health” (Karimi et al.,

2022, p. 1). During the pandemic, healthcare providers made changes to accommodate patient visits by switching them to telehealth. With the change, providers could communicate with patients via telephone call or video call. Providers also integrated some other modalities to support patient health, such as remote monitoring, live video, store-and-forward, and mobile health.

Live video is a two-way interaction method of communication between provider and patient. With this modality, providers can access and evaluate patients who need further care, and the method increased access to intensive care unit (ICU) and emergency department (ED) monitoring. Providers also use this modality to conduct primary care and health education for patients.

Store-and-forward is a method used to store digital images, documents, and prerecorded videos that providers and specialists can access via a chart to evaluate and provide diagnoses and treatment. Examples of this service are X-rays, MRIs, CT scans that providers can review and add or access information added by other providers. During the COVID-19 pandemic, this method improved access by reducing travel and face-to-face interaction while ensuring patients received the same level of care for health needs. The approach also led to reduced patient wait time before being seen by the provider to receive results and boosted patient satisfaction. Specialties such as radiology, gynecology, dermatology, and ophthalmology could all access store-and-forward services to improve patient feedback and reduce the lag time of communication by sending updated information to the provider right away.

Remote patient monitoring is a form of personal health and medical data collection from an individual in one location. The data are then transmitted via electronic communication to a provider or a system in a different location. Examples include monitoring hypertension, diabetes, weight, heart rate, blood oxygen levels, and electrocardiograms (Bingham et al., 2021; Omboni et al., 2020). These data are collected in real time and patients can be contacted directly if a significant change is noted, which can reduce admissions to ED and patient mortality rates. These data can also be used in the future to improve patient health and build a better treatment plan for patients.

Mobile health is a health and public health care practice and education supported by mobile devices through apps that are used to alert patients about any disease outbreaks and how to prevent and minimize or eliminate exposure (Center for Connected Health Policy, 2023).

Telehealth and Mental Health Services

During the pandemic, patients noted an increase in mental health issues and sought care from behavioral health services (Bouabida et. al., 2022). This modality increased the number of patients being seen by therapists through remote channels, as face-to-face services could not be offered. Providers used telehealth to access patients through various modalities to ensure uninterrupted patient care (Gentry et al., 2021; Goddard et al., 2021). During the pandemic, providers could access and work from home or office and adhere to personal protective equipment use. Although this approach led to improved access for patients, it affected satisfaction rates. Several patients reported they preferred to see their provider in person and speak with them in privacy compared to

attending calls and video visits from home (Osofsky et al., 2020). Even more patients sought behavioral health services as the mandated orders to work from home increased during the COVID-19 pandemic. This shift caused many psychological and mental health challenges for patients (Ganesan et al., 2021). Patients considered social interaction and connection as lacking in telehealth, which directly impacted their mental well-being and increased feelings of despair and loneliness (Chen et. al., 2021). Social distancing caused increased anxiety, depression, and increased substance abuse among patients. Patients complained increasingly of domestic violence issues and mental and emotional abuse (Ftouni et. al., 2022).

To tackle these issues, behavioral health providers increased their services by offering visits via phone or video. Patients did not readily accept and appreciate this move as they felt that their privacy was limited at home, confidentiality could not be maintained because other family members were present, and some patients faced barriers to technology use. Providers attended to patients of various ages and diagnoses through telehealth services during this period (Galea et al., 2020). Patients, however, used these services to connect and monitor their health remotely with a behavioral health provider. Their treatment plans could be updated on a regular basis and patient mortality decreased due to early intervention from providers (Gomez, et. al., 2021). Providers could also assist patients in building an improved lifestyle during social distancing and encouraged patients to participate in virtual activities to stay connected to promote their mental health. With telehealth services, providers could check in regularly.

Primary concerns for behavioral health telehealth services revolved around technical issues occurring during the telehealth visit. Some patients raised concerns regarding privacy, cost, and time spent with the provider (Orrange et al., 2021). Older patients 55 years and older experienced more challenges with technology such as not being able to use OTTO accurately, join the call properly, connect to the internet services, and conduct the visit without having the call dropped or reconnecting several times (Hilty et. al., 2020). Notably, younger patients had a higher satisfaction rate with telehealth services compared to the elderly population (Nanda, et. al., 2021).

Patient satisfaction depends on provider–patient trust and the ability of patients to confide their concerns with their providers. Privacy was also a major issue in this context. Not all patients living in urban or rural areas had private space to talk about their behavioral health issues openly. This challenge influenced the way they reacted toward telehealth services. Some patients reportedly came from larger families and due to social distancing issues and stay-at-home orders during the pandemic, patients could not find a private space to have a conversation with their providers. Hence, many patients preferred having face-to-face interaction with their provider, as they could openly speak their minds and share their mental health issues (Jalali, et. al., 2021).

Methodology

Telehealth was a continuous area of study, especially during the COVID-19 pandemic. Several areas of telehealth need to be explored, which is why I chose the Donabedian theory framework for this study. The Donabedian theory's components of structure, process, and outcomes have been used to evaluate the quality of healthcare

(NHS Improvement, 2005). The theory extensively addresses the structure of who can conduct a telehealth visit, who can attend it, and when and how it can be conducted. The theory was also used to address whether providers screen patients regarding telehealth visit accessibility and satisfaction. Other aspects considered included if patients felt happy with the telehealth services or wanted to switch to face-to-face visits even if they were living in rural areas or at a further distance from the provider's location and how the switch could be made easily within the organization.

Components of Donabedian Theory

Structure

The Donabedian model has been used in healthcare since the 1960s, and behavioral health service providers have used this model to provide an improved structure, which is the fundamental foundation for enabling the delivery of high-quality care. Structure is described as "availability of competent service providers and adequate facilities and equipment" (Donabedian, 2005, p. 692). The structure is composed of clinicians, compensation, clinics/community, and consumers (Joffe, 2022). Structure has a simple binary concept in healthcare system—either available or not. Successful telehealth visits can be conducted, and patient satisfaction achieved by building a strong structure and having a provider to offer telehealth services; having technology such as laptops, cameras, telephones, and computers for the providers to perform telecommunication services readily available; ensuring services are covered by health insurances (Medicaid, Medicare, commercial); and ensuring patients can access telehealth services by scheduling appointments.

Process

Process adheres to evidence-based criteria and is considered the heart of the treatment. Process is the part where patients and therapists engage in conversations. Some ways the process of scheduling for telehealth services can be improved is by screening patients for awareness of telehealth appointments, confirming whether a patient is aware the appointment will be audio or video, making a patient aware of why they need a stable internet or cellular connection to proceed with the appointment, answering any pre-health questionnaires before the appointment to avoid lags, making sure a patient is in a safe private place, and identifying patient accurately on telehealth (Joffe, 2022).

Outcome

This layer is also known as the improvement layer in which outcomes are measured to evaluate services. For behavioral health services, outcomes can be measured using patient-reported patient health questionnaire-9 (PHQ9) and general anxiety disorider-7 (GAD7) instruments, which a patient can answer in the office with the therapist to evaluate their level of anxiety, depression, and other associated disorders. Based on the severity of these disorders, therapeutic services and counseling are provided to patients (Joffe, 2022). Telehealth services can reduce inconvenience for patients, as providers can reach out to them via phone or video calls and conduct remote monitoring without having to come into the office physically several times a week and can continue to monitor their health concerns.

The outcome can be measured based on the decrease or increase in the number of patients who receive telehealth services, the number of patients provided full care via

telehealth services, the number of patients able to obtain medications/lab orders/referrals via telehealth, and patient satisfaction with treatment. Other indicators of this outcome include lowering cost and addressing challenges to access to behavioral health care services, training more staff to be able to perform telehealth services, and assessing the increase or decrease in mortality and morbidity, exposure to infections, hospitalizations, and complications by increasing telehealth access (Binder et al., 2020).

Strengths and Weaknesses

There is ample literature available on telehealth but not enough on patient satisfaction and wait times and disparities between urban or rural areas. That gap in care drove me to search telehealth visits extensively. What further prompted me to search the literature was that it is not known if patients living in rural areas receive the same level of service and care as patients residing in urban areas or if the utilization, technical literacy, and advanced technology in urban areas is higher compared to rural areas. My goal was to understand if patients in rural areas have the same level of access to and satisfaction with telehealth services for patient care as urban patient populations. Also, various services are offered through telehealth services, such as live audio/video, remote patient monitoring, and other services; however, it is not clear which service can support long-term care for patients and improve patient care even in rural areas (National Center for Chronic Disease Prevention and Health Promotion [NCCDPHP], 2022).

Researchers have approached the problem by researching the methodology behind what consists of a telehealth and studying the target population. For instance, to improve access of scheduling telehealth visits, it is imperative to screen patients before booking

their appointment to ensure a patient has a higher chance of keeping the appointment and has clear expectations of what type of an appointment it would be. Karimi et al. (2022) discovered that telehealth use ratings were similar among most demographics such as patients on Medical (29.3%), and Medicare (27.4%) as well as Black individuals (26.8%) and those earning less than $25,000 (26.7%). The rates were, however, much lower in patients who were uninsured (9.4%), young adults, and elderly people. Karimi et al. also noted that patients with a higher income and private insurance and White individuals had a higher rate of use (>60%) of video and audio visits compared to uninsured and less educated/lower income groups. To overcome these barriers, it is necessary to screen patients with questions such as: Do you have a device to accommodate the telehealth visit? Would you prefer it to be via telephone? And are there any connectivity issues? Also, ensuring that conditions of the patient can be seen via telehealth should be a regular part of the process. This approach would improve the outcome of the telehealth visits for the patients of all ages and from all demographics.

The strength of the research about telehealth visits is that there is a lot of data and research available because this service surged during the COVID-19 pandemic. Some issues, such as not being able to cover various practices via telehealth services, such as specialty care, and various demographics, such as patients who live in rural areas and do not have regular access to the services or bandwidth/connectivity issues, represent weaknesses (CRTC, 2022). I used screening tools to overcome these barriers and assess ways these services can be improved for access.

Literature Review Related Key Variables/Concepts

Accessibility of Telehealth

The aim of telehealth in the U.S. healthcare system is to increase accessibility to its users. Nevertheless, disparities in access to this technology exist, particularly for low-income and rural populations. Efforts are needed to address these disparities and ensure all Americans have equal access to telehealth services. According to Menon and Belcher (2021), users can employ telehealth to bridge physical and mental healthcare gaps due to its accessibility and flexibility. The researchers further identified access barriers to telehealth before the COVID-19 pandemic. Similarly, Molfenter et al. (2021) showed that telehealth increases the accessibility and availability of healthcare services and identified health disparities that hinder access to healthcare. In both studies, researchers acknowledged that telehealth's accessibility could help end health disparities. Telehealth could be a solution to bridge the gap between marginalized communities and healthcare providers.

The accessibility of telehealth has been a topic of interest since the onset of the COVID-19 pandemic in early 2020, which forced healthcare providers to shift to telehealth to minimize exposure to the virus. According to Barnett and Huskamp (2020), telemedicine offers services in mental healthcare and addresses accessibility issues regarding mental healthcare providers. Switching to telemedicine would meet the demands of the increasing number of patients in need of mental healthcare in underserved communities (Barnett & Huskamp, 2020). According to Spivak et al. (2020), availability of telepsychiatry in the United States has increased since 2017. Providers can use

telepsychiatry for rural populations to increase accessibility to mental healthcare services (Spivak et al., 2020). However, Spivak et al. noted there are barriers to implementation of telepsychiatry such as administrative barriers and limitations with Medicaid funding, thus leading to health inequality between lower and higher income communities. Telehealth services could improve health outcomes for those with limited access to traditional healthcare.

Underutilization of telehealth services is prevalent among mental healthcare users. According to Uscher-Pines et al. (2020), despite substance abuse patients adopting the concept of telemedicine, the usage rates by patients with substance abuse disorders remain low. The underutilization of telehealth care is further aggravated by low adoption levels of telehealth within healthcare facilities. Zhao et al. (2021) stated that the adoption of tele-mental healthcare services would increase access to service delivery. However, they found underutilization among African American communities due to unavailability at treatment centers in underserved communities, which leads to inadequate healthcare access. The underutilization of telehealth services results from a lack of infrastructure and resources to facilitate the services in underserved communities. This imposed a barrier to accessing treatment for substance abuse disorders, making telehealth adoption and effectiveness a challenge.

Telehealth can reduce disparities in access to care by increasing access to specialists and improving patient outcomes, thereby reducing inequalities within the healthcare system. According to Palozzi et al. (2020), telehealth decreases the cost-of-service delivery for patients in rural areas. Telehealth is essential, as rural areas often

have limited access to healthcare services, which can result in poorer health outcomes for residents. Zulman and Verghese (2021) indicated that telehealth as a mode of service delivery among mental health patients can be as effective as in-person care. Telehealth can improve healthcare equity and assist in addressing healthcare disparities. The use of telemedicine during the COVID-19 pandemic showed that telehealth could be used to effectively deliver healthcare services remotely, especially in areas with limited access to healthcare facilities or where in-person visits were impossible due to lockdowns or social distancing measures. However, telehealth services must be accessible and affordable to all patients, regardless of location and income.

Rural–Urban Disparities in Telehealth

The rural–urban disparities in telehealth are characterized by challenges in rural areas, such as a shortage of healthcare professionals and limited access to training opportunities, which affects telehealth utilization. According to Maleka and Matli (2022), the barriers to telehealth outweigh its benefits through socioeconomic determinants. Lower-income individuals and those from marginalized communities may be more likely to experience these disparities and are more likely to need more resources and access to participate in telehealth services. For example, individuals living in rural areas may lack access to high-speed internet, making it challenging to participate in videoconferencing appointments with behavioral health providers. Bouabida et al. (2022) noted the socioeconomic impacts of telehealth and found that it could improve quality of healthcare in rural areas. However, barriers hinder the development of telehealth in rural areas. Bouabida et al. also noted disparities between rural and urban areas in the adoption and

implementation of telehealth services. The need for a skilled workforce in rural areas is a significant challenge to the development of telehealth. Most rural areas need more healthcare professionals and more access to training opportunities. Therefore, lower-income families in rural areas need help to afford services and access health care. The socioeconomic determinants of telehealth adoption and implementation are associated with the population's socioeconomic status.

Barriers to Telehealth Services for Behavioral Patients

Privacy Concerns

Telehealth among clients seeking behavioral care is growing, leading to limited access to healthcare. However, privacy concerns are a valid issue regarding the use of telehealth for behavioral patients. In a systematic review of patients' perceptions regarding the use of telehealth, Pullyblank (2023) identified the theme of privacy concerns. Some patients may hesitate to participate in telehealth sessions due to concerns about privacy and security. Patients who are concerned about the privacy and security of their personal health information may avoid using telehealth services altogether, thereby limiting their access to healthcare. Patients may worry about the confidentiality of their information, especially if they are discussing sensitive topics. Concerns about privacy among patients relate to access to their information, how their information is being shared, and their lack of safe space (Racine et al., 2020). Telehealth providers need to have appropriate security measures in place to protect patient information. Lustgarten et al. (2020) noted that an unintended breach of confidentiality would increase patient risk. Such a breach can create disparities in access to care for people who have experienced

data breaches or identity theft in the past. Therefore, clients may contest teleconferencing for their sessions due to privacy and confidentiality concerns.

Access to quality healthcare and privacy in telehealth involve challenges related to unequal access to technology. Jalali et al. (2021) stated that protecting against threats posed by privacy concerns complicates the measures of securing the telehealth platforms in use. The technological age is prone to hacking and data breaches. Privacy concerns can also lead to bias in healthcare delivery, as healthcare providers may be more likely to withhold certain information or services from patients who are perceived as high risk or vulnerable. Telehealth platforms are susceptible to cyberattacks, which can result in the exposure of sensitive patient information. Ftouni et al. (2022) noted that patients fear using telehealth due to potential cybersecurity issues and infringement of their data. This barrier hinders patients from fully using telemedicine (Ftouni et al., 2022). Cyberattacks could lead to negative consequences such as identity theft or unauthorized access to sensitive medical records. Therefore, healthcare providers should prioritize cybersecurity measures and protect patient data when using telehealth services.

The effectiveness of Health Insurance Portability and Accountability Act (HIPAA) on privacy concerns is limited. According to Bassan (2020), telecommunications companies are free to collect health-related data because there is no comprehensive legislation to regulate telehealth technologies that HIPAA does not govern. This loophole in the legislation leaves patients vulnerable to having their health information sold or shared without their knowledge or consent, highlighting the need for updated regulations to protect patient privacy in the rapidly evolving telehealth industry.

HIPAA requires health care providers to use secure communication channels to transmit patients' health information. Although this measure is important for protecting patients' privacy, it can also create challenges for telehealth, particularly for patients who do not have access to secure communication channels. Hoffman (2020) noted a need for Congress to enact a robust and comprehensive privacy law to grant the U.S. Federal Trade Commission rule-making authority and significantly more funding to improve trust in the use of telehealth. The lack of comprehensive laws by the government is a barrier to the utilization of telehealth (Telehealth.HHS.GOV, 2022). Given the increasing reliance on telehealth during the COVID-19 pandemic, the need for secure and reliable digital health services has become essential. Such laws could reduce patients' concerns about privacy and security.

Technological Barriers

Technological advancements have made telehealth more accessible, but many barriers to its widespread adoption remain, such as a lack of access to high-speed internet and limited digital literacy among specific populations. Underserved communities lack access to high-speed internet, internet gadgets for accessing telehealth. Additionally, concerns about the privacy and security of personal health information can hinder the implementation of telehealth services. Technological barriers have also impacted telehealth (Disney et al., 2021). Summers-Gabr (2020) stated that the lack of broadband access prevented over 20 million people from accessing telehealth. They further indicated that those in the rural community were the most affected, as they lacked broadband access. According to Julie et al. (2021), due to technological infrastructure failure,

patients could not hear the physician audibly during sessions. The hospital administration needs to ensure that everyone, regardless of location, could access telehealth services to prevent inaudibility by patients. Yang et al. (2020) indicated that though virtual care was present, it was inaccessible to Blacks and Hispanics. Access to telehealth became a challenge due to the lack of access to technology and reliable internet, disproportionately affecting minority communities.

Limited Insurance Coverage

This barrier to telehealth is a significant issue for patients who may be unable to afford the out-of-pocket costs associated with virtual care. Individuals from low-income households lack healthcare insurance covers that meet their needs due to a high unemployment rate, making them susceptible to telehealth disparities. Access to telehealth is also limited for those who rely on public insurance programs that do not cover telehealth services. Yang et al. (2020) noted that Blacks and Hispanics relied on commercial insurance coverage sponsored by employers, and due to the rise in unemployment rates, accessing health care was a challenge for these groups. Patients in rural and urban areas from low socioeconomic backgrounds are particularly affected by this limitation, as they may have limited access to in-person healthcare and rely heavily on public insurance programs for their medical needs. This limitation further exacerbates health disparities and highlights the need for increased access to telehealth services for all individuals, regardless of their insurance coverage or socioeconomic status. According to Chen et al. (2021), compared to Whites, ethnic minorities in rural and suburban areas who were Medicare beneficiaries and had dual Medicaid coverage used telehealth less

frequently because of the high cost of treatment for Medicare users. The researchers identified the existence of telehealth disparities due to increased costs, especially for the beneficiaries of Medicare. One significant problem is that some insurance plans do not cover for telehealth services or reimburse patients at lower rates than in-person visits. As a result, offering telehealth services can be challenging for healthcare providers, primarily if they treat many patients who need more insurance or have inadequate insurance. Another problem is that different payment plans may be available for telehealth services.

Reimbursements

Telehealth has become an increasingly popular way for healthcare providers to deliver patient services, especially during the COVID-19 pandemic. However, reimbursement policies and payment structures have created disparities in access to telehealth services, particularly for underserved populations. According to Goddard et al., (2021), reimbursement was a challenge to telehealth in school-based health centers. Reimbursement restrictions have limited coverage for certain telehealth services, making it difficult for patients to afford and access the care they need, especially those in rural areas and from low socioeconomic backgrounds. According to Kichloo et al. (2020), although all 50 states and Washington, D.C., cover some form of live video through Medicaid fee-for-service, Medicaid programs cover store-and-forward services only in 16 states and RPM services in 23 states, and 10 states have all three with some restrictions. Baumann et al. (2020) acknowledged that private insurers receive varying Medicaid reimbursements as 22% of the states established parity laws for telehealth. Moreover,

some insurance plans may only cover certain telehealth visits, such as mental health services, and exclude other types, such as primary care or specialty care. Such limited coverage can lead to disparities in access to care, particularly for patients with complex medical conditions who require specialized care.

Language and Cultural Barriers

Patients who speak a different language or come from a different cultural background may have difficulty communicating effectively in a telehealth session, impacting their quality of care. Dawson et al. (2020) conducted a study on indigenous adults and found the need for culturally diverse programs and interventions, regardless of the modalities. Language barriers result from a need for more access to interpreters or translators; hence, effective dispensation of telecare is limited for ethnic minorities who face healthcare inequities. Ethnic minorities speaking languages different from that of their healthcare provider may need help understanding their diagnosis, treatment options, or medication instructions. Additionally, technical difficulties with videoconferencing or other communication tools may make it difficult to hear or see the provider clearly (Al-Samarraie et al., 2020). According to Moecke et al. (2023), the need to work with Indigenous people creates culturally based and informed telehealth. Therefore, healthcare providers should consider providing language interpretation services and cultural competency training to ensure effective communication and quality care for patients from diverse backgrounds in telehealth settings. Additionally, incorporating cultural practices and beliefs into treatment plans can improve patient engagement and adherence to treatment.

Cultural barriers can also limit access to telehealth services. Some patients may have different expectations for their healthcare from those of their provider, which can result in misunderstandings or dissatisfaction with the care provided. According to Grieco-Page et al. (2021), English proficiency creates a barrier to the use of tele-mental health among service providers and users. Ethnic minorities battle such disparities, as they are required to be fluent in English to communicate effectively with healthcare professionals. Due to language barrier, they face disparities in telehealth care system. Having similar cultural and linguistic backgrounds can reduce barriers. Leader (2022) discussed the importance of culturally safe spaces in interventions in promoting the utilization of healthcare. Cultural norms are a preexisting barrier to accessing telehealth in underserved communities. Therefore, to ensure that all patients can access the care they need, it is crucial for healthcare providers to be aware of these linguistic and cultural barriers and take action to overcome them. For patients who are unable to access telehealth services due to technological limitations, providers may need to offer interpretation services, modify communication strategies to meet patients' cultural expectations, or explore alternative methods of providing care.

Preference for In-Person Care

This preference may stem from a need for more familiarity with telehealth, concerns about the quality of care provided remotely, or a desire for more personalized interactions with healthcare providers. According to Almathami et al. (2020), dissatisfaction with using telehealth is reflected in the client's preference for in-person meetings. Some patients may prefer in-person care and resist using telehealth services.

Clary et al. (2020) noted the preference for in-person sessions led some patients to end their sessions due to the complexities of telehealth and perception that it is a burden. The disparity is caused when patients cannot access the necessary technology or do not have a stable internet connection, leading to difficulties in communication and disruptions in the session. Healthcare providers must acknowledge and address these concerns while highlighting the benefits and convenience of telehealth. Education and support can help patients feel more comfortable and confident using telehealth services. Patients may believe that receiving care in person is more personalized and it facilitates better communication between them and their healthcare provider. Additionally, they might think that receiving care in person, including physical examinations and other diagnostic procedures, gives them a more thorough health assessment.

Privacy and confidentiality concerns arise. Patients may feel that telehealth needs the same level of privacy and confidentiality as in-person care. They may be concerned that their personal health information could be compromised during a virtual appointment or that their internet connection may not be secure due to a lack of access to the technology and literacy. According to Nanda and Sharma (2021), women were the most concerned about their privacy and thus refused to engage in telemedicine. Additionally, the lack of familiarity with technology and the perceived complexity of telemedicine platforms may contribute to patients' reluctance to engage in virtual appointments. According to Houser et al. (2022), the lack of understanding of telehealth among patients and the perceived inequities of technology impact their usage. Individuals from high socio-economic backgrounds enjoy technological literacy; hence, they can easily access

telehealth. In contrast, other patients may prefer the familiarity and comfort of a physical visit to a healthcare facility, as they may feel more at ease seeing and interacting with their healthcare provider in person rather than through a computer or phone screen. However, it is essential to note that telehealth can offer many benefits, such as convenience, reduced travel time and costs, and increased accessibility. Healthcare providers can work with patients to address their concerns and help them feel more comfortable with telehealth while still providing high-quality care.

Clinicians' Barriers to Telehealth

Resistance to Change

The fear of the unknown among clinicians hinders the utilization of telehealth. According to Cosh et al. (2022), mental health practitioners were reluctant to use telehealth. Clinicians may fear the potential risks associated with telehealth, such as data breaches, technical difficulties, and patient dissatisfaction. According to Snoswell et al. (2020), clinicians' reluctance impacts the utilization of telehealth. The reluctance to use telehealth is due to their perceived lack of competence in using the technology and concerns over the quality of care delivered through telehealth. The underutilization of telehealth services leads to disparities in accessibility of telehealth among rural populations and ethnic minorities as the reluctance by physicians to use telehealth limits the opportunity for those from low socioeconomic backgrounds to access telehealth. Therefore, by investing in telehealth infrastructure and promoting its adoption, healthcare providers can help bridge the gap in healthcare access and improve health outcomes for

underserved communities. Additionally, policies that address reimbursement barriers and expand broadband access can further enhance the utilization of telehealth services.

The unwillingness to adopt telehealth is due to concerns about patient outcomes. Clinicians may worry that telehealth will compromise the quality of care or their ability to establish a good rapport with their patients. According to Liu et al. (2021), doctors found it difficult to examine the patients via telehealth because they could not. However, telehealth can still provide a viable alternative to in-person visits, especially for patients with limited access to healthcare facilities or those who live in remote areas. Gomez et al. (2021) indicated the lack of physical presence and examination affected the utilization of healthcare services. It imposed disparities among populations of low socioeconomic backgrounds in remote areas, as they were unable to access telehealth. Telemedicine could be a potential solution to bridge the gap in healthcare access for disadvantaged populations, but it requires improvements in infrastructure and accessibility. Additionally, policymakers should consider implementing policies prioritizing equitable access to healthcare services for all individuals, regardless of socioeconomic status. With proper training and technology, clinicians can effectively communicate with their patients and provide high-quality care through telehealth.

Technology and Infrastructure

Limited access to technology, poor infrastructure, and internet connectivity promotes disparities in rural and urban areas. Indria et al. (2020) identified two barriers to the utilization of telemedicine: infrastructure and the Internet. Ideally, some clinicians may not have access to the necessary technology or resources to effectively implement

telehealth in their practice, especially in rural or underserved areas. Jensen et al. (2020) stated that professionals need to eliminate the digital divide as professionals to reduce disparities. Therefore, policymakers and healthcare organizations must prioritize providing support and resources to clinicians in these areas to ensure equitable access to telehealth services for all patients. Westby et al. (2021) identified the need to include telephone visits within the telehealth under the Centers for Medicare and Medicaid reimbursement. Telephone visits would cater for all thus reducing health disparities. They can include investing in infrastructure, providing training and education, and offering financial incentives to adopt telehealth technology. As a result, this modality would reduce disparities within remote monitoring.

Licensure and Credentials

According to LeRouge and Garfield (2013), licensing and credentialing requirements can vary by state, which can pose challenges for psychiatrists who wish to provide telehealth services to patients in different forms. Psychiatrists must be licensed in each state where their patients are located, which can be time-consuming and expensive. They must ensure they have the necessary licenses, certifications, and insurance coverage to practice across state lines and through various telehealth platforms. Furthermore, some state licensing boards may have strict requirements for telehealth services, requiring psychiatrists to complete specific training or obtain additional credentials before they can provide them. These requirements can also pose challenges for psychiatrists who wish to offer telehealth services to rural areas and those from low socioeconomic backgrounds in urban areas.

Litvak et al. (2021) stated that licensing and credentials hinder telemedicine implementation. These barriers may prevent patients from receiving timely and effective mental health care, particularly in rural or underserved areas with a shortage of licensed psychiatrists. Therefore, policymakers need to address these licensing and credentialing challenges to promote the use of telemedicine in psychiatry. The federal government regulates telemedicine but not the practice of medicine. However, the federal government can regulate the practice of medicine by allowing or prohibiting the use of telemedicine to deliver health care. The federal government can also require states to adopt specific standards or regulations for telemedicine services. In addition, the federal government can regulate telemedicine by requiring all providers offering services in the United States to be licensed and credentialed.

The administration challenges for credentials as barriers to telehealth from the clinician's perspective is the challenge of obtaining and maintaining credentials for providing virtual care. According to Muir et al. (2020), organizational constraints are barriers to mental healthcare access. Addressing these barriers entails ensuring providers have the necessary licenses, certifications, and insurance coverage to practice across state lines and through various telehealth platforms. Furthermore, some state licensing boards may have strict guidelines for telehealth services, such as requiring psychiatrists to complete specific training or obtain additional credentials before they can provide telehealth services. According to Mahmoud et al. (2019), licensure and reimbursement restrictions hinder the effectiveness and adoption of tele-psychiatry. These requirements

can also pose challenges for psychiatrists who wish to offer telehealth services, with significant impact on the underserved communities' access to telehealth.

Harst et al. (2020) noted that organizational barriers hinder effectiveness of telehealth, which leads to inaccessible telehealth care, leading to disparities in quality access to telemedicine by individuals from low socioeconomic backgrounds. As a result, psychiatrists who want to provide telehealth services may have to obtain multiple licenses, which can be costly and time-consuming. This challenge promotes disparities, making it difficult for underserved populations to access mental healthcare services arising from telehealth infrastructure (Childs et al., 2020). The administration challenges for credentials as barriers to telehealth from the patient perspective are the need for more technology and internet availability.

Financial Challenges

Financial constraints and viability pose disparities in telehealth. According to Malâtre-Lansac et al. (2020), billing difficulties and the lack of financial incentives hinder telehealth's effectiveness. Telehealth has been criticized for its inability to ensure low-income and high-income patients receive the same quality of care. The economic challenges have been associated with the lack of insurance coverage and the high cost of technology. Chen et al. (2020) suggested that financial incentives are essential in implementing telehealth. The economic incentives could make telehealth more affordable and accessible. Also, some insurance companies may not reimburse psychiatrists for telehealth services if they are not licensed in the same state as the patient. This restriction can be a significant financial barrier for psychiatrists who wish to offer telehealth

services to patients across state lines. This issue is particularly significant for psychiatrists in rural areas who often have limited access to specialists in the state where they are licensed—the lack of reimbursement for telehealth services and authorities that restrict the practice of telehealth area. The lack of authorization for telehealth services and the restrictions on telehealth practice are particularly relevant. Medicare in rural regions of the United States has been particularly affected, as it hinders the growth of telehealth services.

Legal and Regulatory Barriers

The legal framework is especially true in the field of healthcare, where advances in technology have created new opportunities for remote healthcare. However, legal and regulatory barriers to telemedicine can hinder the ability of healthcare providers to access and use these technologies effectively. According to Mahmoud et al. (2022), the relaxation of regulatory measures would ensure the implementation of telepsychiatry. The stringent regulations hinder access to healthcare by ethnic minorities and those from rural and low socioeconomic backgrounds. In addition, existing laws and regulations may not be designed to address the unique challenges of telemedicine. Rangachari et al. (2021) argued that a lack of regulatory clarity has led to inconsistent standards of care for telehealth services. The policy-level barriers under reimbursement and licensure promote disparities in telehealth utilization for the most vulnerable populations. The accessibility of telehealth services is dependent on the legal environment. The need for national policies to encourage telehealth access is a significant obstacle to telehealth. Privacy and

security concerns under telehealth can hinder the use of technology. Physicians must have a legal basis for providing telehealth to ensure patient confidentiality.

Barriers to Adoption of Telehealth

The adoption of telehealth required gradual transitioning. Duffy et al. (2022) identified three primary barriers to telehealth services: the need for a high-speed internet connection, a private and secure location to receive a telehealth service, and the need for a reliable and secure technology platform. The barriers to telehealth are even more significant for patients who lack access to high-speed internet and a private space to receive a telehealth service. According to Hasselberg (2020), the adoption of telehealth has experienced numerous challenges that led to resistance from patients. From the provider perspective, the barriers to the adoption of telehealth services include the need to upgrade the technology infrastructure, have a secure and reliable technology platform, and hire a skilled workforce. A skilled workforce is critical as telehealth requires different skills and competencies from traditional in-person care, and providers may require additional training to deliver telehealth services effectively. The disparities caused by its adoption still afflict those from low socioeconomic backgrounds, as utilization of telehealth is a challenge. Additionally, reimbursement policies and regulations may present challenges for providers looking to implement telehealth services.

Telemedicine adoption in primary care settings also faces various challenges. Clinicians face various barriers to telehealth adoption, including concerns about reimbursement, a lack of training and technical support, and the need for workflow and

patient management changes. These challenges are particularly pronounced in primary care settings, where providers may have limited resources and competing demands on their time. According to Lindenfeld et al. (2023), the characteristics of the population determine the barriers and facilitators of telehealth. As a result, such characteristics define the population and the quality of and access to telehealth among the members of underserved communities, hence instigating inequities. Hall et al. (2022) pointed out that each group in the study agreed that not all patients should use telemedicine, but that it is a good option for some patients occasionally. Therefore, the adoption of telemedicine should be tailored to the specific needs and preferences of each patient, as well as their medical condition and technological literacy, to maximize its benefits and minimize its limitations. Additionally, healthcare providers should receive adequate training and support to ensure they can effectively use telemedicine and provide high-quality patient care.

The disparities in healthcare services among underserved communities are due to policy implications. Ortega et al. (2020) noted that telemedicine exacerbated the disparities during the COVID-19 pandemic due to policy implications and changes. The changes made then in the policies saw those from rural areas and underserved communities face more significant challenges in accessing healthcare services, which further widened the gap between the privileged and underprivileged populations. The lack of access to technology and digital literacy skills also contributed to the disparities in telemedicine utilization. According to Omboni et al. (2022), there is a need to end and overcome inequities posed by telemedicine due to socioeconomic and technological

factors. Therefore, policymakers should focus on developing policies that address the digital divide and provide resources to underserved communities. They also recommended implementing telemedicine programs that are culturally sensitive and accessible to all individuals, regardless of their socio-economic status. For the adoption of telehealth to be effective, clinicians need to break down the barriers to improve quality and access to healthcare.

Minimizing Disparities Through Facilitators of Telehealth in Behavioral Care

Mental health utilization rate is below 50% among ethnic minorities and individuals from low-income households (Ralston et al., 2019). Telehealth can potentially increase access to behavioral health care for underserved populations despite the disparities in its use. By identifying and addressing barriers to telehealth adoption, such as a lack of technology or internet access, providers can work toward minimizing these disparities and improving overall access to care. According to Olmos-Ochoa et al. (2023), supporting those from ethnic minority groups facilitates tele-mentoring by engaging them in peer support and community-building initiatives to end disparities. Telehealth can potentially increase access to care, particularly for underserved populations through education (Gartz & O'Rourke, 2021). To minimize inequities, it is essential to ensure that patients have access to the necessary technology and that providers are trained in culturally sensitive care. According to Ruiz-Cosignani et al. (2022), using evidence-based interventions for indigenous and ethnic minorities would meet their mental health needs, as tele-psychiatric programs are designed for this purpose. Additionally, involving community leaders in the care process can help address cultural barriers and improve

mental health outcomes for these populations. It is crucial to approach mental health care for indigenous and ethnic minorities with a holistic perspective considering their unique cultural backgrounds and experiences.

The government, through evidence-informed decisions, needs to promote access to and quality care among underserved populations. According to Kavanagh et al. (2022), evidence-informed decisions can help meet the needs of underserved and rural populations impacted by policy changes. The decisions can support telehealth through access to technology; increase participation in telehealth by increasing patients' access to technology such as computers, smartphones, and high-speed internet. Governments and healthcare organizations should work to provide underserved communities with the necessary technology and internet connectivity. Young et al. (2022) noted that addressing the gaps in telehealth using cost-effective and long-term health models would reduce disparities. Therefore, by providing training, telehealth providers would be able to deliver high-quality care via telehealth. This training would encompass how to work with patients who have limited access to technology (Helleman et al., 2020).

Summary

The literature review using current studies revealed disparities in telehealth in a behavioral care setting. The barriers to telehealth access have been discussed to show the discrepancies imposed (Menon & Belcher, 2021; Molfenter et al., 2021; Spivak et al., 2020). The urban-rural disparities revealed an insight into telehealth access (Bouabida et al., 2022; Maleka & Matli, 2022). The analysis of the barriers to telehealth access and utilization was from the perspective of patient and clinician privacy concerns (Lustgarten

et al., 2020; Pullyblank, 2023; Snoswell et al., 2020). The literature review further included a synthesis of the barriers to the adoption of telehealth, which impose telehealth disparities on the utilization of healthcare services (Hall et al., 2022; Hasselberg, 2020).

Healthcare disparities exist for ethnic minorities and underserved communities within the rural-urban setting. Therefore, by focusing on the barriers to access and utilization of telehealth, disparities experienced by individuals from low socioeconomic backgrounds are unraveled. The Donabedian theory has been used to evaluate the quality of healthcare using components of structure, process, and outcomes. This model supported by the studies by Berwick and Fox (2016). However, studies have not focused on the disparities in telehealth services among patients seeking behavioral care in rural and urban areas in 2020-2022. This research gap is critical as telehealth has become increasingly important during the COVID-19 pandemic. Understanding disparities in access to care can inform policies to improve equity in healthcare delivery.

Literature Rationale and Synthesis

The dependent variables selected are wait time for behavioral health telehealth visits, patient preference, and patient satisfaction while the independent variables are encounter type and encounter location. Access to telehealth services has many challenges throughout the country, which may negatively impact patient satisfaction (Butzner & Cuffee, 2021). Patients complained that they lacked the knowledge of how to connect to a video call, the poor connectivity prevented effective communication, and they felt like they could not connect with their providers well (Osofsky et al., 2020). The researchers also noted disparities among patients using more audio services in rural areas due to the

lack of digital literacy, lacking English proficiency or using English as a second language, and an inability to use the video services. As telehealth services surged significantly during the pandemic, more policies need to be implemented to improve access across all the states due to the stated barriers and to ensure equitable access to telehealth service by all patients regardless of urban/rural area (Karimi et al., 2022).

I obtained the data for the quantitative research from the FQHC Organization, an FQHC-based community clinic located in California. The data set covers the majority of the patients for the rural areas residing in the zip codes of 95901 and 95993 and some residents of Sacramento area, including an urban population in the zip code of 95835. Consequently, the study will lead to in-depth understanding the correlation between the influence of telehealth services being accessed by patients residing in rural and those in urban areas in Yolo/Sacramento counties during the years 2020-2022. Some of the studies I found addressed the challenges to mental health services via telehealth services during the Covid 19 pandemic, which has caused a digital divide among the patients (Clare, 2021). The literature highlighted that several providers expressed concerns about the disruption that the telehealth services have caused in their practice, as they cannot connect with patients physically and several distractions cause the patient care to be delayed. Patients who have disabilities such as hearing or learning and those who spoke a different language and required the presence of an interpreter found it much harder to coordinate a telehealth appointment (Karimi et al., 2022). Sometimes providers have to rush through a Telehealth appointment to see another patient present in the room or delay the calls if another patient’s appointment is longer than anticipated.

Some providers note that they lack training and all proper modalities to conduct a telehealth visit such as cameras, audio/speakers, or even space. These challenges impacted the digital divide on the provider's end. These studies captured the dependent variables of behavioral health patients and the impact on their satisfaction and independent variables of the challenges of where the visits were being conducted or barriers the patients face due to their location. The problem for this study is that it is not known if patients living in rural areas receive the same level of service and care as patients residing in urban areas or if there is more utilization, technical literacy, and advanced technology in urban areas such as Sacramento County, compared to the rural areas of the Yolo/Sutter counties. My goal was to understand if the patients in the rural areas have the same level of access to and satisfaction with telehealth services for patient care as urban patient populations. Also, various services are offered through telehealth services such as live audio/video, remote patient monitoring, and other telehealth services but it is not clear which service can support patients to obtain long-term care and improve patient care even in rural areas (NCCDPHP, 2022).

Definitions

The definitions of key terms used in this research are as follows:

Behavioral health: Behavioral health is defined to mental health and substance use disorders, life stressors and crises, and stress-related physical symptoms. It refers to the prevention, diagnosis, and treatment of those conditions (Botts, 2022, p.1).

Digital divide: Digital divide is the gap between demographics and regions that have access to modern information and communications technology and those who lack

or have restricted access. The technology can include the telephone, television, personal computers, and internet connectivity (Hanna, 2021).

Encounter location: The Census Bureau defines a "rural" area in the United States as any area that is "not-urbanized." The Census Bureau identifies two types of urban areas: (a) urbanized areas, which are composed of 50,000 people or more, and (b) urban clusters, which have between 2,500 and 50,000 people. Approximately 60 million individuals in the United States live in a rural area" (Waibel & Perry, 2022, p. 2508)

Encounter type: Encounter type refers to "Equipped with remote monitoring, access to multi-provider video visits, and virtual translators, some specialty clinics adopted a 100% virtual approach" (Reeves et al., 2021, p. 2)

Federally Qualified Health Center (FQHC): An FQHC is a qualifying health center, which qualifies for funding under Section 330 of the Public Health Service Act (PHS). It qualifies for enhanced reimbursement from Medicare and Medicaid, serves an underserved area or population, offers a sliding fee scale, provides comprehensive care of medical, dental, and behavioral health, and has ongoing quality assurance programs and a governing board of directors (FQHC Associates, 2023).

OTTO: OTTO Health is a video visit telehealth solution to improve communication, efficiency, and quality of care between patients and their providers (Greenway Health, 2023). It is integrated with the Nextgen Electronic Health Record (EHR) system for use in conducting video visits for FQHC Organization Clinic (Greenway Health, 2023).

Patient preference: “Patient preferences refer to the individual’s evaluation of dimensions of health outcomes and are but one of the large number of preferences that may influence health care choices. These judgments are expressed as statements or actions.” (Brennan & Strombom, 1998, p. 257)

Patient satisfaction: “Patient satisfaction is an important measure of healthcare quality as it offers information on the provider’s success at meeting the expectations of most relevance to the client and a key determinant of patients’ perspective behavioral intention” (Xesfingi & Vozikis, 2016, p. 2)

Telehealth: These services are defined as “the use of electronic information and telecommunication technologies to support long-distance clinical health care, patient and professional health-related education, administration, and public health” (Karimi et al., 2022, p. 1).

Wait time for behavioral health telehealth visits: The length of time, which the patient “waits for treatment and between sessions” (Punton et al., 2022, p. 2)

Assumptions

Every reader has a different understanding of the term “telehealth.” Telehealth is defined as “the use of electronic information and telecommunications technologies to support and promote long-distance clinical health care, patient and professional health-related education, and public health and health administrations” (Karimi et al., 2022, p. 2). Some readers might assume that telehealth is only video or audio visit. However, it can be divided into four parts such as audio, video, remote monitoring, and store-and-forward. To assume that every reader reading this article understands that telehealth is

limited to only audio and video visits would not be fair. Therefore, it is imperative to define the independent variable of the encounter type for telehealth new patient (phone), telehealth follow up visit (phone), OTTO (video) visits, OTTO follow up (Video), behavioral health visit (audio/video/in-person), and behavioral health follow up (audio/video/in-person). It is imperative to clarify any assumptions to avoid confusion around the topic.

Assumptions are easy to make around telehealth because the term was only used widely during the pandemic. In my organization, the challenges erupted when the patients started to question what a telehealth really entailed and what they could do to be more prepared for it. It became imperative to screen every patient and clearly define the criteria for patients eligible for the visit via the phone or video call instead of coming to the office. It is also important to ask questions around bandwidth, connectivity issues, data challenges, or privacy issues before scheduling the appointment (Osofsky et al., 2020). Addressing these issues led to a decrease in the assumptions of what to expect in a telehealth visit and an improvement in the show rate. As more patients and providers understood the core of telehealth visits, patient satisfaction continues to improve. Also, patients living in the rural area and experienced the challenges of connectivity or privacy were not as satisfied and still preferred in-person visits, which posed a challenge to access during the pandemic times (Butzner & Cuffee, 2021).

Scope and Delimitations

The issues chosen were patient satisfaction and preference after telehealth visits by the Telehealth Department and determining whether a relationship existed. Most of

the patients followed through with the telehealth visit but still preferred a face-to-face interaction with the provider. This preference was a true challenge during the pandemic, as in-person interaction could not be offered because of concerns around patient and provider safety due to the increased exposure to the coronavirus during the pandemic. Administrators set limitations and many providers were either working from home or away from the local city where the patient resides. These challenges imposed a threat to internal validity for this study.

The causal relationship between telehealth services offered by the Behavioral Health Department and the patient preference and satisfaction cannot be fully inferred. Ecological factors such as the population being of variable age groups, demographics where the patient resides, and the barriers to technology contributed to this issue. Comparing these factors to measure the study's findings to different people, groups, environments, and measurement scales would impact the concern around external validity.

This study can benefit other services as well such as primary care, women's health, internal medicine, and possibly extending to specialty care. With telehealth, the success rate of reaching population beyond the clinic to offer services and making patient care accessible for all is high. Addressing challenges around technology and training the staff to reduce these barriers would improve outcomes of the services. Ensuring patients can address the barriers of technology by asking screening questions would also improve the satisfaction rate and possibly help more patients transition to telehealth services easily.

Limitations

The limitations I foresaw in conducting this study was the large amount of data available for analyzing the healthcare inequalities between rural and urban areas. The data set included duplicates for the same patient several times in the year and had to be reduced significantly leaving the sample size to 149 patients. Reaching out to the patients and asking questions regarding previous visit experiences provided latent feedback about how satisfied the patients were with their visits and their preferred type of visit in the future.

Technological barriers including a lack of advanced equipment such as cell phones, computers, and laptops for every patient to use imposed a huge barrier to obtaining accurate information. Another challenge was the willingness of the provider to provide/prescribe medications such as controlled substances or psychiatric interventions over telehealth. Patient's demographics also imposed to be a huge challenge as they impacted the patient's ability to access a safe, private space to discuss their health and safety.

The study's participants and the general population are very different, which means that the results may not be generalized. Participants might have altered their actions because they were aware that they were being observed. Ecological validity was also an issue, as the environment or setting for the study could alter the interaction between treatment and reactive effects of the population. Population validity, which occurs when there is an interaction between treatment and selection, was also another potential limitation. To overcome such biases, I considered participants from all ages and

factors such as the usability of the technology, the connectivity and internet usage, access to cellphones and laptops/desktops, and good internet bandwidth. Because these factors account for much of the population's characteristics, it would be easier to understand the limitations and barriers and eliminate them.

Significance

The inequalities and disparities seen in patient care with telehealth services can be understood better and improved in the years to come. Another area to focus on is how to improve the access to specialty care with telehealth so that all patients regardless of their location can have equitable access to care (NCCDPHP, 2022). Specialties such as pediatrics, women's health, ENT, neurology, and some other divisions of medicine can also connect with patients via video visits, which would increase patient access to care tremendously. Phone call visits can also be conducted but with video, patients can feel more connected and speak about their signs and symptoms with the provider more clearly.

The positive change I would like to contribute with this study is ensuring that all patients are screened before an appointment is booked so that they understand how to access the telehealth service. Insurances should be checked ahead of time to ensure timely payment and prevent cost issues for the patients. Also, no patient should be turned away due to limitations of telehealth services and modalities should be made for patients who have difficulties reaching the providers, whether for chronic disease management or behavioral/psychiatric issues (Telehealth.HHS.GOV, 2022). The potential implications for positive social change would be the lack of following through with the structure such

as failing to screen the patients appropriately and scheduling poorly. Failure to inform the patient of their options for the visit via audio or video and only allowing face-to-face visits will lead to limited access, therefore, failing to produce favorable outcomes such as increasing patient access and satisfaction.

Also, telehealth implementation should be an ongoing process, as changing the underlying structure and modalities would be made based on patient preference and provider availability. Therefore, asking the provider their preferences for conducting visits and allowing private space and time for the visits would increase provider satisfaction. These factors combined can improve the access to telehealth not only for behavioral health services but also for other specialties.

Summary and Conclusions

Telehealth can help healthcare organizations, systems, and clinicians increase access to and enhance the standard of treatment in remote areas. The difficulties and burdens patients face, such as transportation concerns associated with going for specialty care, can be lessened, or minimized using telehealth in rural locations to deliver and help with the delivery of healthcare services. Telehealth can enhance communication, monitoring, and timeliness within the healthcare system. From the data set, patients have significant access telehealth visits through audio and video modalities. However, the challenges of patient satisfaction and wait times need to be addressed. Patients have expressed their preference of being seen in person, and the challenge is how to improve patient satisfaction even when the visit is happening from a distant place. Finding that

balance and creating that structure heavily depends on the role of healthcare administrators and the support and feedback of patients and providers.

The study fills the gap by addressing whether the population living in urban areas have improved access to modern/advanced technology and attend more live audio/video calls with their providers, whereas the rural population might struggle to even find connectivity (see CRTC, 2022). Social factors such as housing availability, affordability of care and ability to pay for telephone services, a lack of literacy on how to use the telehealth service, and language barriers all impose a challenge to optimal utilization of telehealth services.

Because in-person visits were declining during the pandemic, telehealth services rose rapidly. The increasing trends peaked between April and December for age groups between 3-17 years and more particularly for adult primary care services and some specialties. Of note, the telehealth services could not be used for surgical or most pediatric visits, which caused a huge disparity in healthcare for patients (Mehrotra et al., 2021).

Telehealth services utilization rate spiked, reaching 154% in 2020 compared to 50% in 2019 due to increased stay-at-home orders and changes in patient care management. However, multiple challenges such as patients having limited access to the Internet or devices especially in rural areas and a lack of familiarity with technology emerged (Koonin et al., 2020). Most of the patients seeking care and making telehealth appointments failed to understand how the service would be delivered. Sometimes the providers would be running behind wrapping up with one patient before getting to the

next one. The inability to see the patient in person also increased the risk of assessing the patient accurately and sometimes caused a delay in the treatments. Investigating all these identified issues helped fill the gap in the knowledge and practice of telehealth services. Telehealth services at the FQHC Organization are based on research evidence. The organization has dedicated few members to research ways of how to continue to improve access and overcome any barriers and challenges. Recently, the video visits were extended to the Specialty Care services such as Pediatrics. Also, more emphasis has been placed on screening, scheduling, confirming with the patients about the appointment to decrease the no-show rate, and support more providers to provide telehealth services to the patient regardless of their location. The aim of this modality is to increase patient satisfaction and access and improve patient care in the long-term.

Section 2: Research Design and Data Collection

Introduction

The purpose of this quantitative study was to explore the correlation between behavioral health patients residing in rural versus urban areas in Yolo/Sacramento counties based on their telehealth service rate during 2020–2022. Behavioral health patients in rural and urban areas faced unique challenges accessing telehealth services during 2020-2022 in Yolo/Sacramento Counties. The digital divide caused by telehealth services in different practices highlights a gap in patient care. This shift in modality increased access, but patient satisfaction was not as high and many patients prefer being seen in person rather than via telehealth (Karimi et al., 2022). Therefore, the aim of this quantitative study was to better understand how access to telehealth can be improved for behavioral health providers and patients and address the gap in the literature.

Section 2 will include a descriptive discussion of the research design and rationale, participants of the study, target population, sampling techniques, and power analysis. I will also discuss operationalization of variables, data analysis plan, research questions and hypotheses, and the statistical procedures for testing the hypotheses. In addition, this section will include a discussion of the instrumentation and data collection, threats to validity, and ethical procedures.

Research Design and Rationale

For this study, I used a quantitative methodological approach. Researchers use the quantitative approach to provide statistical analysis and measurement of the phenomenon under observation. Through statistical analysis, the standardized procedures of

measurement can be provided to increase the validity and generalizability of the findings. Quantitative research is appropriate to the answer questions with clearly defined variables and for data collection from reliable participants. As a result, the use of a quantitative method in the current study eliminated subjectivity, as the findings are reliable and valid. Under a quantitative approach, hypotheses can be accepted or rejected based on analysis of the data collected.

Variables

The dependent variables of this study are wait time for behavioral health telehealth visits, patient preference, and patient satisfaction. I measured wait time as a nominal variable, with values of <1 month or >1 month and patient satisfaction as a ratio variable and analyzed it as a percentage. I also measured patient preference as a nominal variable with values of *in person* and *telehealth*.

The independent variables of this study are encounter type and encounter location. I measured both independent variables as nominal variables. The values for encounter type were telehealth follow up, audio only visit, behavioral health telehealth, behavioral health telehealth established, behavioral health telehealth new, OTTO, and OTTO follow up. The values for encounter location were rural (FQHC Linda Clinic 95901 and FQHC Colusa Clinic 95993) and urban (FQHC Sacramento Clinic 95835) (Pick Peach, 2023).

Research Design and Choice

The research design for this study was an experimental design, which researchers use to examine how variables interact with each other. In this design, a researcher can measure variables and ascertain the nature and relationships of the identified variables.

This study has independent and dependent variables. My goal was to test a causal relationship between two or more variables. I collected data from 2020–2022. The design choice for this research was quantitative analysis. I used this approach to show a correlation of the influence of telehealth services being accessed by patients residing in rural versus urban areas in Yolo/Sacramento counties during 2020–2022. The research design was appropriate to advance knowledge in the discipline by establishing the cause–effect relationship between the dependent variables (wait time for behavioral health telehealth visits, patient preference, and patient satisfaction) and the independent variables of telehealth (encounter type and encounter location). Another rationale for the choice of this study design was to help in understanding the correlation of the identified variables.

Methodology

Population

The target population of the study was north-central California patients residing in rural areas and patients residing in urban areas. The study's target population was 149 participants. I collected participants' demographic data, including their medical record number and race. Another category of data collected included ethnicity. I also collected data on primary language spoken, gender, age, date of birth for individual patients, Medicaid number, date of the appointment, the encounter date, wait time for appointment, encounter type, encounter location, patient satisfaction, and patient preference of visit.

Sampling

The sample size for this study was 149 patients, which I obtained from 3,000 visits recorded after removing repetition or multiple visits recorded for the same patient. The inclusion criteria included the population's characteristics as follows:

- Race: American Indian/Alaska Native; Black/African America, White, more than one race, Asian, or Unreported/Refused to Report Race
- Ethnicity: Hispanic, non-Hispanic-Latino, Unreported/Refused to Report Ethnicity
- Language: English, Farsi, Hindi, Spanish
- Gender: male/female
- Age: 18–84 years
- Date appointment scheduled.
- Encounter date
- Wait time for appointment (<1 or >1 month)
- Encounter type
- Encounter location
- Patient satisfaction (0–100%)
- Patient preference: telehealth or in-person

Sampling and Sampling Procedures

I used random sampling technique for this study. In this technique, each participant equally represents the population. I used the simple random sampling

technique to eliminate any biases during participant selection, thereby ensuring the sample is representative. I contacted potential participants through recruitment emails and informed them of the study's purpose, goals, eligibility requirements, and advantages of participation. I requested participant data from the health information technology (HIT) team, which they had gathered over the period 2020–2022 using the NextGen electronic health record (EHR) system along with AZARA Healthcare system (NextGen Healthcare, 2023). I used no specific methodology to collect the data, but I reduced multiple visits for patients to only one visit in the timeframe to justify the inclusion of multiple patients from various demographics. The exclusion criteria were patients who had multiple visits in the timeframe. I reduced these visits to only one visit during 2020–2022.

The procedure for obtaining access to the data set entailed requesting the HIT team to provide the data via email. I received a formal permission to access the data through an email sent to the organization (see Appendix A). Participants consented to participate by completing the consent forms. The organization evaluated the research protocol and granted me permission to conduct research. I am also participating in a grant for telehealth equity and inclusion and discussed with multiple members about the need for the data set to understand the challenges and disparities. The data set used in this study did not include the challenges to inclusion and equity but aided in understanding how telehealth impacts patient satisfaction in different demographic regions.

Data Collection

I collected the data for the study variables from Nextgen EHR and AZARA system using an Excel spreadsheet, which was the convenient mode for the institutions. I also collected patient demographics using an Excel spreadsheet. The data were reputable, as they were from a valid and operational source, the Nextgen EHR and AZARA system. This system is a credible source and the information contained helped address the research questions and hypotheses. All the behavioral health members have access to this system. The staff scheduling appointments also have access to this system, and this system contains all patient visit data and information. I extracted the data from the Nextgen EHR and AZARA Healthcare system, which may be useful for the organization in understanding the effect size and the sample size. Specific variables such as location, encounter type, and patient demographics can be evaluated through this system (AZARA Healthcare, 2022).

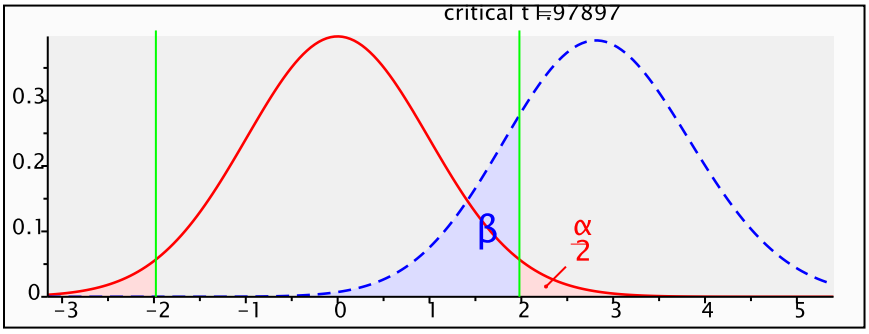
Sample Powering

I conducted power analysis to determine the appropriate sample size based on the attendance of the patients as per patient visits. I conducted sampling power when determining the number of records of the patients using G*Power analysis for the variables. The critical size effect that would be statistically significant for this study was 1.97. According to Kadam and Bhalerao (2010), the power β was at 80%, which was acceptable. I conducted a two-tail test for bi-direction, with the effect size set at 0.5 and an error probability of 0.05, showing a 5% chance of making a type 1 probability error. The actual power value for the test was 0.8014, with a sample size of approximately 128

as per patient records based on the G*Power analysis. The effect size indicated that the sample was statistically significant and had sufficient statistical power as per the priori power analysis.

Figure 1

*A Representational Diagram of G*Power Analysis*



Statistical Software and Data Preparation

The statistical software used in this analysis was SPSS Version 25. I chose this mode because of the nature of the data set. The data contained several categorical variables. I recoded these variables into different variables. I used SPSS variable recode into different variables dialog option to recode and reassign values to existing variables or collapse ranges of existing values into new values for a new variable. I added he names of the old variables a number 1 at the end of the variable name to differentiate them from the recoded variable.

Operationalization

The measurement of each variable was on a nominal, continuous, or a ratio scale. Following is an example of the operationalization from SPSS. I labeled the variables as

interval or ratio with both values considered under “scale” in SPSS and thus may not be distinguished. They were any variable, which could not be ranked, and its categories were nominal. I considered any variable with only 2 options or dichotomous level to be ordinal. The operational definitions of the variable for the purpose of this study are as follows:

Encounter Type. “Equipped with remote monitoring, access to multi-provider video visits, and virtual translators, some specialty clinics adopted a 100% virtual approach” (Reeves et al., 2021, p. 2)

Encounter Location. The Census Bureau defines a “rural” area in the United States as any area that is “not-urbanized.” The Census Bureau identifies two types of urban areas: (a) urbanized areas, which are composed of 50,000 people or more, and (b) urban clusters, which have between 2,500 and 50,000 people. Approximately 60 million individuals in the United States live in a “rural area” (Waibel & Perry, 2022, p. 2508)

Patient Preference. “Patient preferences refer to the individual’s evaluation of dimensions of health outcomes and are but one of a large number of preferences that may influence health care choices. These judgments are expressed as statements or actions.” (Brennan & Strombom, 1998, p. 257)

Patient Satisfaction. *“*Patient satisfaction is an important measure of healthcare quality as it offers information on the provider’s success at meeting the expectations of most relevance to the client and a key determinant of patients’ perspective behavioral intention” (Xesfingi & Vozikis, 2016, p. 2)

Wait time for Behavioral Health Telehealth Visits. It is the length of time the patient "waits for treatment and between sessions" (Punton et al., 2022, p. 2)

The dependent variables for this study are wait time for behavioral health telehealth visits, patient preference, and patient satisfaction. I measured wait time as a nominal variable, with values of <1 month or >1 month and patient satisfaction as a ratio variable and it analyzed as a percentage. I also measured patient preference as a nominal variable with values of "in person" and "telehealth." The independent variables are encounter type and encounter location. I measured both independent variables as nominal variables. I calculated variable scores based on the strength of dependent and independent variables. I also conducted regression analysis to determine the strengths of the variables based on an increase or decrease in trend.

Data Analysis Plan

Upon collecting the data for the study, I transferred the data from an Excel spreadsheet into the SPSS software. I then analyzed the data for any outliers to identify data that were significantly different from the others. I removed missing data or bad data in the different ways. According to Leys et al. (2019), outliers could influence the relationship between variables. The authors propose three ways to deal with outliers (a) keeping the outliers, (b) removing the outliers, and (c) recoding the outliers. Therefore, for the purpose of this study, I used these methods to address any missing data or bad data while maintaining the sample size.

I calculated and reported any descriptive statistics per patient information and study's inclusion criteria of the participants. I also conducted statistical analysis to

identify patterns and relationships from the data collected. Therefore, I used statistical tests to assess the strength of a relationship between two variables. The purpose for conducting these analyses was to ascertain the degree of linearity between the study's variables and identify any differences in the variables between groups. Therefore, the results of such tests would indicate whether a relationship between the variables exists and the direction of the relationship (i.e., positive or negative). In addition, I analyzed the demographic and main variables using descriptive statistic such as standard deviations, frequencies, and means.

Research Problem

The problem for this study is the challenge of telehealth services amongst behavioral health patients in rural and urban areas during 2020-2022 in Yolo/Sacramento Counties.

Purpose

The main purpose of this quantitative study was to explore the correlation between behavioral health patients residing in rural versus urban areas in Yolo/Sacramento counties based on their telehealth service rate during the timeframe of 2020-2022

Research Questions and Hypotheses

The research questions are framed to explain the correlation between telehealth service and urban/rural patient population residing in urban/rural areas within the State of California between 2020-2022. The specific research questions are:

RQ1: Is there an association between behavioral health telehealth encounter type visit for behavioral health services and wait time for appt in rural suburbs within the State of California between 2020 and 2022?

H_0: There is no association between the behavioral health telehealth encounter type visit for behavioral health services and wait times in rural areas between 2020 and 2022.

H_1: There is an association between the behavioral health telehealth encounter type visit for behavioral health services and wait times in rural areas between 2020 and 2022.

RQ2: Is there an association between telehealth follow up for behavioral health services and patient satisfaction in urban areas within the State of California between 2020 and 2022?

H_0: There is no association in telehealth follow up for behavioral health visits and patient satisfaction in urban areas between 2020 and 2022.

H_1: There is an association in telehealth follow up for behavioral health visits and patient satisfaction in urban areas between 2020 and 2022.

RQ3: Is there an association between encounter location for Behavioral health telehealth services and patient satisfaction in (a) rural areas and (b) urban areas, within the State of California between 2020 and 2022?

H_0: There is no association in patient's encounter location for behavioral health services and patient satisfaction in rural and urban areas between 2020 and 2022.

H_1: There is an association in patient's encounter location for behavioral health services and patient satisfaction in rural and urban areas between 2020 and 2022.

In this experimental study, I used Chi-square and multiple linear regression to test the validity of the hypothesis. Table 1 depicts the variables for the null hypothesis generated from the study's research questions. I conducted statistical tests to test the study's hypothesis regarding the linkage and connection between variables. Therefore, the results reported include the ratio or interval values used for both dependent and independent variables to establish the correlation.

Table 1

Statistical TESTS for Null Hypothesis

Null hypotheses	Variable	Variable scale	Measure/statistic
$H_0$1: There is no association between the BH telehealth encounter type visit for BH services and wait times in rural areas between 2020 and 2022.	Encounter type visit Wait times Encounter location	Nominal variable Nominal variable nominal variable	Multiple linear regression
$H_0$2: There is no association in Telehealth Follow up for BH visits and patient satisfaction in urban areas between 2020 and 2022.	Telehealth follow up Encounter location Patient satisfaction	Nominal variable Nominal variable Ratio variable	Multiple linear regression
$H_0$3: There is no association in patient's encounter location for BH services and patient	Encounter location Patient satisfaction	Nominal variable Ratio variable	Multiple regression

satisfaction in rural and urban areas between 2020 and 2022.

Note: BH = Behavioral health

Threats to Internal and External Validity

The study's participants are very different from the general population. External validity impacts the study's findings through generalizability. The study's results may not be generalized because the participants were considerably younger than employees in other departments. In addition, participants may alter their actions when they are aware that they are being observed. This can affect the output from the data analysis. This section contains a discussion of the threats to external validity.

Ecological Validity

The ecological validity is studied to explain how well the environment or the setting in which the experiment is conducted aligns with the setting to which the researcher intends to generalize the findings. This aspect is referred to as the interaction of treatment and setting and sometimes as the reactive effects of experimental arrangements. Under ecological validity, I analyzed the variables of race and ethnicity and presented the results.

Population Validity

Population validity is the interaction of treatment and selection. It indicates how well the characteristics of the participants align with the target population the researcher wishes to generalize back to.

Sensitivity and Specificity of Variables

I measured the sensitivity of variables based on how often the test indicated that there was a disorder. Specificity means that if a person does not have a disorder how often will the test be negative and how often will the test indicate that there is no disorder? I determined the sensitivity and specificity of variables in this study based on the participants' gender and encounter type.

A group design's internal validity is threatened by interference from several treatments. When participants in one group receive all or part of the treatment in addition to the one given as part of an experimental or quasi-experimental design, there is a problem. In these circumstances, distinguishing between the variation associated with one treatment or condition and, if any, the influence of another treatment or condition on the outcome may not be possible. Multiple treatment interference might arise when participants are assigned to one level of the independent variable in terms of independent and dependent variable designations. Therefore, I determined internal validity through research questions, which were to evaluate the existence of an association between behavioral health telehealth encounter type visit for behavioral health services and wait time for appt in rural suburbs within the State of California between 2020 and 2022.

Ethical Procedures

I incorporated the basic guidelines when conducting the current study. I reviewed the study proposal and had it approved by Institutional Review Board (IRB). I sought IRB approval from the institution before collecting data. This implies that before the approval, I did not contact the participants about the concerning proposed study. Even

though the data collected and used for the study were secondary data, the institutions filled consent forms to protect the anonymity of the participants.

To retrieve and use the data set through the HIT team from the FQHC Organization (Pick Peach, 2023), IRB approval was necessary. Although it is secondary data set, I made efforts to ensure no harm or breach of participant privacy. I retrieved data from the Nextgen and AZARA Healthcare System through the HIT team. I sent an email requesting for the items. I kept the data anonymous and only used them for the study. Measures for maintaining patient confidentiality included concealing patients name and other imperative information, which could not be accessed outside of the Nextgen or AZARA Healthcare systems. Only the team working for FQHC Organization such as the HIT team members, behavioral health providers, and myself had access to this data if they needed to be reviewed.

I expected an additional scrutiny by IRB because the data used in this study was secondary data. I used additional measures and scrutiny to protect participants' privacy and confidentiality for instance by having them sign informed consent forms. Patients responded to questions about whether they preferred to be seen in person or via telehealth modalities and what percentage would they rate their satisfaction via phone. All patients had an equal opportunity to respond to these queries. I further assured them that the data they intend to provide would be considered private and be password-protected when stored and safely handled and stored by encryption of the files. In addition, for safekeeping purposes, I kept the copies of data in two different locations. Upon

completion of the study and after 5 years, I will permanently destroy the data from the participants.

Summary

The intended methodological approaches have been described in this section. The purpose of this quantitative study was to explore the correlation between behavioral health patients residing in rural versus urban areas in Yolo/Sacramento counties based on their telehealth service rate during the timeframe of 2020-2022. In this section, I discussed in detail the chosen research design and rationale, participants of the study, target population, sampling techniques, and power analysis. I further addressed the operationalization of variables, data analysis plan, research questions and hypothesis, and the statistical procedures used in testing the hypothesis. This section also included data collection procedures and an insight into the threats to validity and ethical procedures. Section 3 will include the presentation of the findings and results of the analysis of secondary data collected. A descriptive report of the statistics will also be included.

Section 3: Presentation of the Results and Findings

Introduction

The main purpose of this study was to explore the association between behavioral health patients residing in rural and urban areas in Yolo/Sacramento counties based on their telehealth service rate during the timeframe of 2020-2022. The study's research questions and hypotheses are included in the following subsection. Statistical analyses followed data cleaning and coding with missing data treated listwise in all analyses. This chapter covers the study findings, including a description of the sample population's demographic characteristics, descriptive statistics for the key variables, and statistical assumptions analysis using multilinear regression. The key sections of this chapter include the introduction, data collection, results of analysis, and summary.

Research Questions and Hypotheses

The research questions are framed to explore the association between telehealth services and patients residing in urban–rural areas in California between 2020 and 2022. The specific research questions and hypotheses are as follows:

RQ1: Is there an association between behavioral health telehealth encounter type visit for behavioral health services and wait time for an appt in rural suburbs within the State of California between 2020 and 2022?

H_0: There is no association between the behavioral health telehealth encounter type visit for behavioral health services and wait times in rural areas between 2020 and 2022.

H_1: There is an association between the behavioral health telehealth encounter type visit for behavioral health services and wait times in rural areas between 2020 and 2022.

RQ2: Is there an association between Telehealth follow up for behavioral health services and patient satisfaction in urban areas within the State of California between 2020 and 2022?

H_0: There is no association between telehealth follow up for behavioral health visits and patient satisfaction in urban areas between 2020 and 2022.

H_1: There is an association between telehealth follow up for behavioral health visits and patient satisfaction in urban areas between 2020 and 2022.

RQ3: Is there an association between encounter location for behavioral health telehealth services and patient satisfaction in (a) rural areas and (b) urban areas, within the State of California between 2020 and 2022?

H_0: There is no association between patient encounter location for behavioral health services and patient satisfaction in rural and urban areas between 2020 and 2022.

H_1: There is an association between patient encounter location for behavioral health services and patient satisfaction in rural and urban areas between 2020 and 2022. In this experimental study, I used Chi-square and multiple linear regression to test the validity of the hypothesis.

Data Collection

I collected the data for the study variables from the Nextgen EHR and the AZARA Healthcare system and compiled them using an Excel spreadsheet. Similarly, I

gathered patient demographics using an Excel spreadsheet. The robustness of the data's source rests on its derivation from the validated and fully operational Nextgen EHR and AZARA systems. This reputation served to establish the data's credibility as an authoritative resource and the content was pivotal to this research inquiry and the associated hypotheses. I used the data from the system to examine specific variables, including location, type of encounter, and patient demographics (see AZARA Healthcare, 2022).

Study Sample

The demographic details of the sample population for this research study are shown in Table 2. Based on category factors, the table includes insightful information on the composition of the participants. The sample primarily comprised 79.9% female participants and 20.1% male participants. According to the distribution of ages, people 60 and above made up the largest group (41.5%), followed by those in the 50–59 range (20.4%). Notably, 6.2%, 14.9%, and 8.2% of the population, respectively, were in the 18–20, 21–29, and 30-39 age categories. English speakers were the majority in this population (94.0%), whereas Farsi, Hindi, and Spanish speakers made a minority (0.7% each). According to ethnicity data, 10.1% of participants were Hispanic or Latino, compared to 70.5% who were from other ethnic groups. The sample included various racial groupings: White (12.8%), Black (20.1%), American Indian (9.4%), Asian (8.7%), and others. In the variables for race and ethnicity, the unreported category stood out, which may indicate missing data. This thorough summary highlights the demographic makeup of the group.

Table 2

Demographic Characteristics of the Sample Population

Categorical variable	Frequency	% of total
Gender		
Female	119	79.9
Male	30	20.1
Age		
18–20	9	6.2
21–29	22	14.9
30–39	12	8.2
40–49	13	8.8
50–59	30	20.4
60 or older	61	41.5
Language		
English	140	94.0
Farsi	1	0.7
Hindi	1	0.7
Spanish	7	4.7
Ethnicity		
Hispanic/Latino	15	10.1
Non-Hispanic/Latino	105	70.5
Unreported	29	19.5
Race		
American Indian	14	9.4
Asian	13	8.7
Black	30	20.1
More than one race	24	16.1
Pacific Islander	5	3.4
White	19	12.8
Unreported	44	29.5

Results

Descriptive Statistics

The dependent variables are wait time for behavioral health telehealth visits and patient satisfaction. I measured wait time as a nominal variable, with values of <1 month

or >1 month and patient satisfaction as a ratio variable and analyzed it as a percentage. I also measured patient preference as a nominal variable with values of *in-person* and *telehealth*. The independent variables are encounter type and encounter location. I measured both independent variables as nominal variables.

The key descriptive statistics of the dependent and independent study variables are shown in Table 3. The table includes information on the distribution for the wait time variable, which is calculated as a nominal variable with values reflecting whether the wait time for behavioral health telehealth visits was less than 1 month or greater than 1 month. The valid sample size (N = 149) of participants whose data were available is included in the descriptive statistics. Metrics such as mean (58.22%), standard deviation (28.25%), skewness (–0.027), and kurtosis (–1.198) show details about the distribution's central tendency, variability, and shape. The table contains information on the same factors for patient satisfaction, which was calculated as a ratio variable and examined as a percentage. The telehealth visits variable, which represented patient preference and nominally measured as either in person or telehealth, is also explained. Understanding the distribution and properties of this variable is possible due to the valid sample size and descriptive statistics used.

Table 3

Descriptive Statistics of the Main Independent and Independent Variables

Parameters		Wait time	Patient satisfaction	Telehealth visits
N	Valid	149	149	149
	Missing	0	0	0
Mean			58.2215%	
Std. deviation			28.25484%	
Skewness			–.027	
Std. error of skewness			.199	
Kurtosis			–1.198	
Std. error of kurtosis			.395	
Minimum			5.00%	
Maximum			100.00%	

Assumptions Analysis

In linear regression, assumption analysis is essential to guarantee the reliability of findings and accurate interpretations. Researchers ensure their findings are robust by examining fundamental presumptions including linearity, independence, homoscedasticity, residual normality, a lack of multicollinearity, and a lack of endogeneity (Denis, 2018). By addressing these presumptions, statistical inferences are more reliable, biased estimates are avoided, and accurate model predictions are supported.

Assumption #1

In this study, I measured the variables at the continuous level because they fell within the interval or ratio variable types. The continuous variables such as wait time for behavioral health telehealth visits, patient satisfaction percentage, and patient satisfaction fulfilled this assumption. These variables involved numeric measurements, which allow

for meaningful mathematical operations. For instance, wait time was quantified in hours, whereas patient satisfaction percentage represented a continuous scale. Ensuring the dependent variables adhere to this assumption is essential for conducting valid linear regression analysis, facilitating accurate modelling, and enabling appropriate interpretation of relationships between variables (Sarstedt & Mooi, 2018).

Assumption #2

The independent variables used in the study had to be measured at the continuous level, implying that they possessed characteristics of interval or ratio variables. In this research, variables such as "wait time," "patient satisfaction," and "telehealth visits" exhibited a continuous spectrum of values rather than being categorical or ordinal. Continuous measurement ensures that the relationship between the independent variables and the dependent variable is effectively modeled using linear regression techniques (Sarstedt & Mooi, 2018). For instance, "wait time" represents a numerical measure of time intervals, "patient satisfaction" is quantifiable as a percentage, and "telehealth visits" encompasses a quantitatively continuous preference scale.

Assumption #3

From the output of Chi-square tests used to test for the relationship between the variables, there were significant linear relationships between the variables involved. The Pearson Chi-square value was 156.223 with a p-value of .000, indicating an observed association between "encounter location" and "patient satisfaction." Also, there was a significant association between "encounter location" and "patient satisfaction" with a Chi-square value of 102.36. Although the association between encounter type and wait

time was not significant, this variation was small and may not interfere with the outcome of the statistical test (see Yang et al., 2020). The output of the Chi-square also showed no significant outliers for all the variables. Therefore, this assumption was met for the test.

Assumption #4

The data need to show homoscedasticity, which is where the variances along the line of best fit remain similar as one moves along the line. The outputs in Figure 2, Figure 3, and Figure 4 show that there is homoscedasticity for the variable residuals (see Bhardwaj, 2019). Therefore, this assumption was met.

Figure 2

Homoscedasticity for Patient Satisfaction

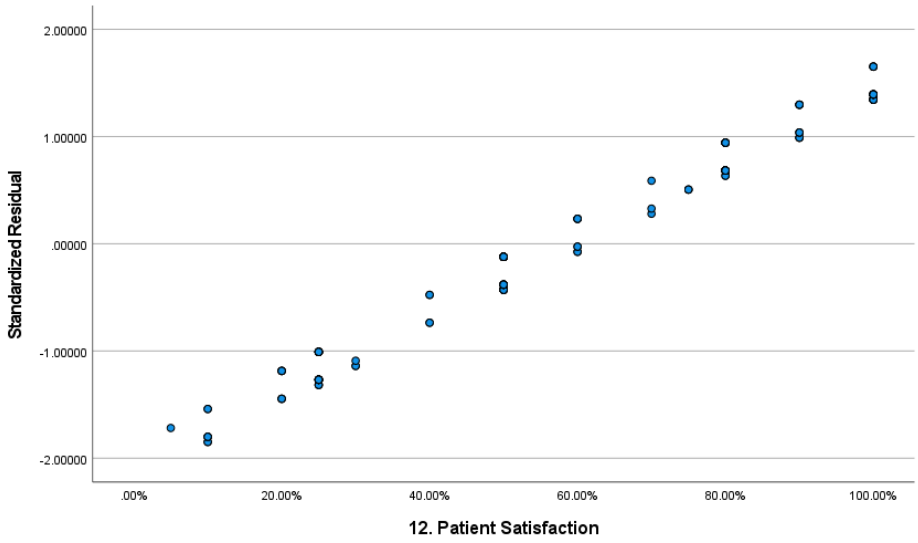


Figure 3

Homoscedasticity of the Encounter Location

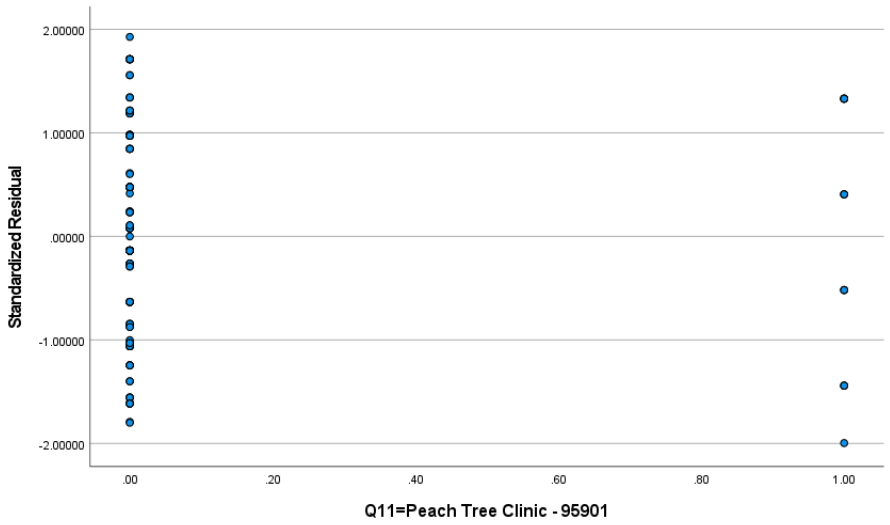
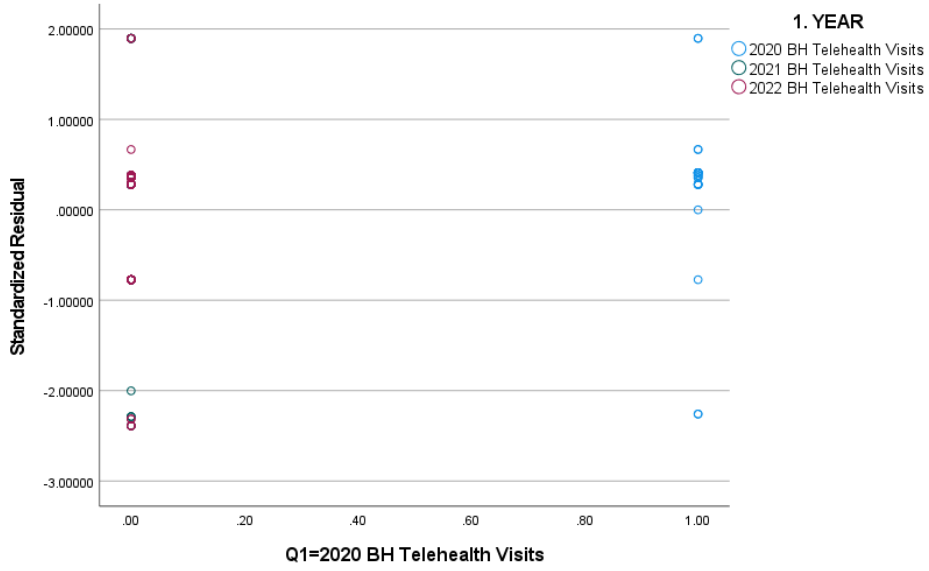


Figure 4

Homoscedasticity for Telehealth Visits



Assumption #5

This assumption was that all the residual errors were normally distributed. From Figure 5, Figure 6, and Figure 7, all the residual errors are normally distributed, thus this assumption is met. Therefore, linear regression was the most suitable statistical test for these data, as this assumption was met (see Denis, 2018).

Figure 5

Normal Distribution for Standardized Residual Variables for Follow-Ups

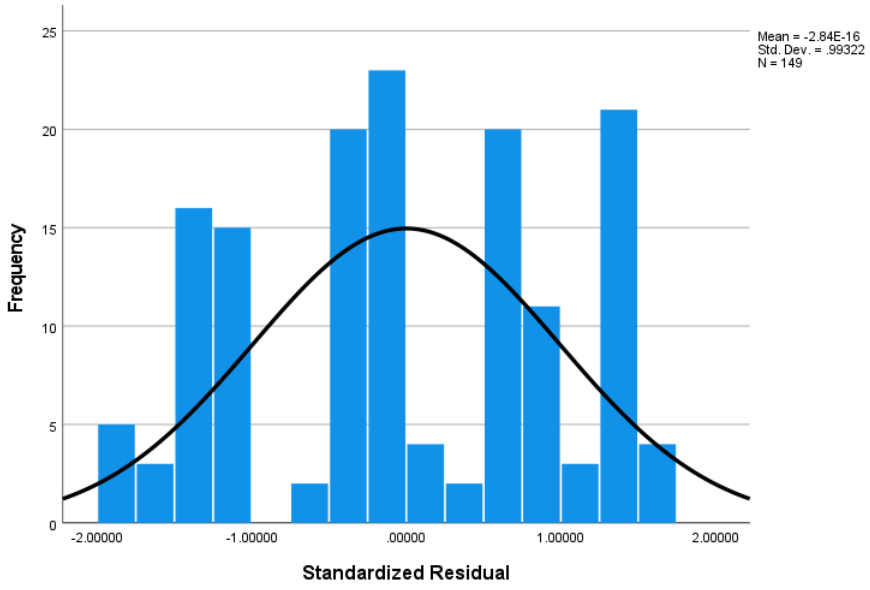


Figure 6

Normal Distribution for Standardized Residual Variable for Encounter

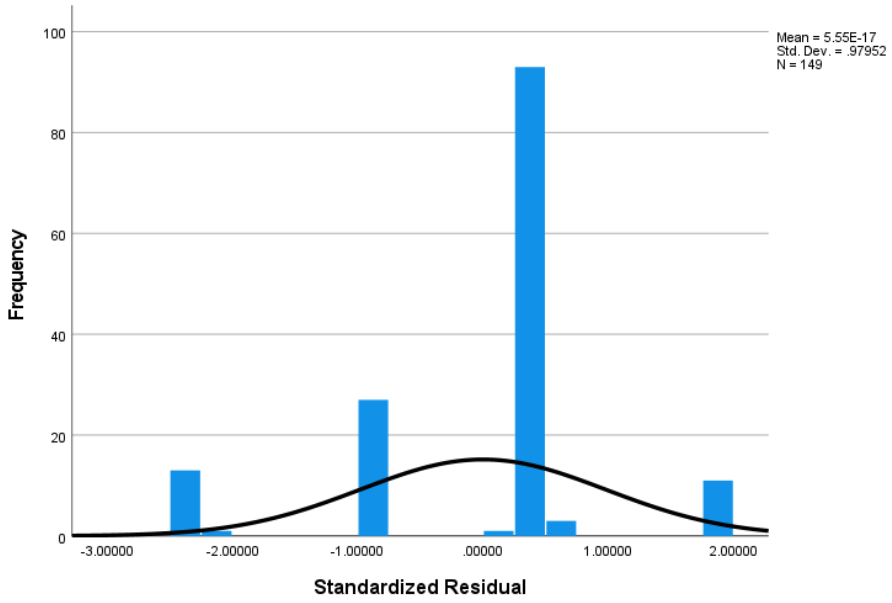
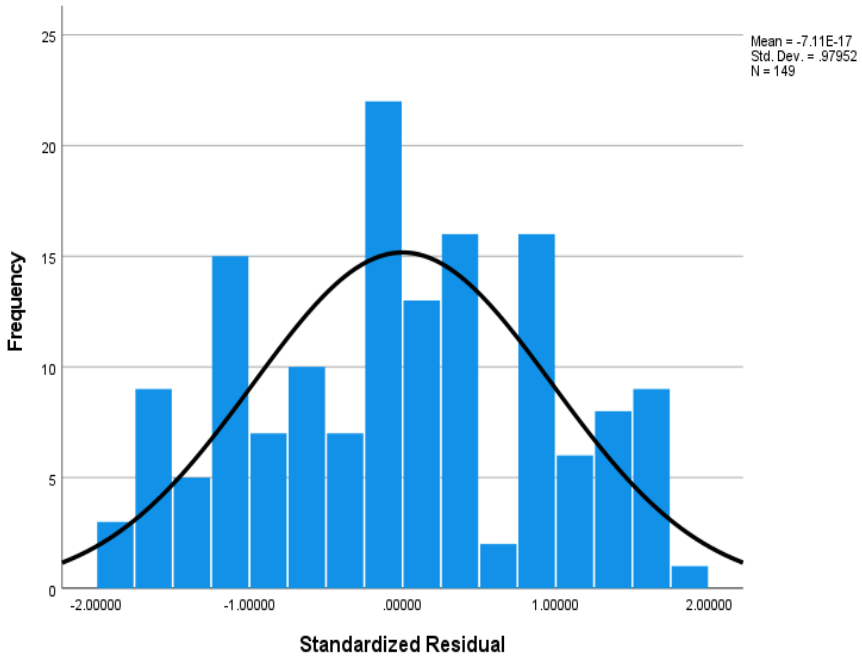


Figure 7

Normal Distribution for Standardized Residual Variable for Participation



Summary

Analysis of Research Questions

The specific research questions for this study are as follows:

RQ1: Is there an association between behavioral health Telehealth encounter type visit for Behavioral health services and wait time for an appt in rural suburbs within the State of California between 2020-2022?

The aim of the analysis for RQ1 was to assess whether the predictor variables (different encounter locations) are significantly associated with the dependent variable (wait time for appt). The p-value for the hypothesis test associated with the overall model (ANOVA) was 0.174, which is greater than a typical significance level (e.g., 0.05). This

result suggests that, based on the provided data, there is insufficient evidence to reject the null hypothesis, meaning that there is no significant association between the "behavioral health telehealth encounter type visit for behavioral health services" and "wait time for appt in rural suburbs within the State of California between 2020 and 2022."

RQ2: Is there an association between telehealth follow up for behavioral health services and patient satisfaction in urban areas within the State of California between 2020 and 2022?

Based on the provided output, the p-values associated with the model's F-statistic and the predictor variables indicated no significant association between telehealth follow up for behavioral health services and patient satisfaction in urban areas within the State of California between 2020 and 2022. Therefore, the null hypothesis that there is no association between these variables is not rejected.

RQ3: Is there an association between encounter location for behavioral health telehealth services and patient satisfaction in (a) rural areas and (b) urban areas, within the State of California between 2020 and 2022?

Given the significance of the overall model ($p < .05$), there was evidence to support the presence of an association between patient encounter location and patient satisfaction in the context of the provided predictor variables. Based on the provided output, there was evidence of an association between patient encounter location and patient satisfaction. However, the specific associations for different encounter locations may vary. Therefore, the null hypothesis is rejected, as there was an association between

encounter location for behavioral health telehealth services and patient satisfaction in rural and urban areas between 2020 and 2022.

Table 4

Regression Coefficients

Variable	Sum of squares	Df	Mean square	F	Sig.
Patient satisfaction	2165.284	2	1082.64	1.363	.259
Encounter location	14219.244	6	23269.874	3.238	.005
Telehealth visits/follow ups	1.798	6	.300	1.525	1.74

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

Introduction

The purpose of this quantitative study was to explore the correlation between behavioral health patients residing in rural and urban areas in Yolo/Sacramento counties based on their telehealth service rate during 2020–2022. The research questions for this study were as follows:

RQ1: Is there an association between behavioral health telehealth encounter type visit for behavioral health services and wait time for an appt in rural suburbs within the State of California between 2020 and 2022?

RQ2: Is there an association between telehealth follow up for behavioral health services and patient satisfaction in urban areas within the State of California between 2020 and2022?

RQ3: Is there an association between encounter location for behavioral health telehealth services and patient satisfaction in (a) rural areas and (b) urban areas, within the State of California between 2020 and 2022?

I collected data for the study variables from Nextgen EHR and AZARA system using an Excel spreadsheet, which was a convenient mode for the institutions. The p-value for hypothesis test associated with the overall model (ANOVA) was 0.174, which is greater than a typical significance level (e.g., 0.05). Additionally, based on the provided output, the p values associated with the model's F statistic and the predictor variables indicated there was no significant association between telehealth follow up for behavioral health services and patient satisfaction in urban areas within California

between 2020 and 2022. Given the significance of the overall model ($p < .05$), there was also evidence of an association between patient encounter location and patient satisfaction in the context of the provided predictor variables. Moreover, based on the provided output, there was evidence of an association between patient encounter location and patient satisfaction. However, the specific associations for different encounter locations may vary.

Interpretation of the Findings

The principal finding from the hypothesis test for RQ1 was that the overall model (ANOVA) had a p value of 0.174, which is greater than a typical significance level (e.g., 0.05). This result suggests that, based on the provided data, there is insufficient evidence to reject the null hypothesis, meaning that the association between the behavioral health telehealth encounter type visit for behavioral health services and wait time for appointment in rural suburbs in California between 2020 and 2022 is not significant.

These findings align with Karimi et al.'s (2022) observations in their study of strategies for enhancing access to telehealth access and reducing wait times for appointments in rural suburbs in California from 2020 to 2022. The researchers noted that despite mental health counselors employing various modalities such as audio, video, telephone, and remote monitoring to enhance telehealth access, the increase in access did not translate to a high level of patient satisfaction (Karimi et al., 2022). Many patients still preferred in-person visits to telehealth. The implication drawn from this discovery is that healthcare administrators should allocate their resources and efforts more

strategically, prioritizing quality improvement strategies for other services or processes instead of solely focusing on improving telehealth access.

This implication finds support in the work of Berwick and Fox (2016) and Hilty et al. (2020). Hilty et al. (2020) proposed that healthcare administrators should establish a structured framework for enhancing telehealth services to address these challenges. Additionally, Berwick and Fox (2016) emphasized the importance of providing consistent and thorough training to all service providers regarding telehealth procedures and equipment. To ensure a more successful implementation of telehealth services and improve appointment attendance rates while mitigating patient issues, the researchers suggested that patients should undergo a standardized screening process to assess their ability to connect to a telehealth visit, ascertain the availability of the necessary equipment, and determine the type of telehealth visit they require. By implementing these measures, healthcare providers can strive for higher appointment attendance rates and reduce potential patient concerns.

The overarching finding from the hypothesis test for RQ2 was that there is no significant association between telehealth follow up for behavioral health services and patient satisfaction in urban areas in California between 2020 and 2022. Therefore, I did not reject the null hypothesis that there is no association between these variables. These findings are in line with Yang et al.'s (2020) findings regarding the disparities in outpatient visits for mental health and/or substance use disorders during the COVID-19 surge and partial reopening in Massachusetts. According to Yang et al. (2020), despite the rapid expansion of telehealth during this period, especially in response to the COVID-

19 pandemic, its implementation in metropolitan regions for behavioral health care may not necessarily coincide with patient satisfaction. There are several elements at play. For example, patient–provider interactions in mental health care may be particularly subtle and delicate (Yang et al., 2020). Patients may be less satisfied with their care when they use telehealth because they are unable to form a strong connection or rapport with their providers. Different socioeconomic and demographic variables may have contributed to the lack of a meaningful correlation between telehealth follow up and patient satisfaction in metropolitan locations (Xesfingi & Vozikis, 2016). Urban patients may have various needs and wants not shared by their rural counterparts.

The quality of a patient's experience using telehealth services may also be impacted by differences in access to technology, internet connection, and digital literacy across different metropolitan regions. Monaghesh and Hajizadeh (2020) discussed the demographic parameters affecting telehealth usage and satisfaction. Telehealth services were found to be less likely to be used by patients who were older or not White during the COVID-19 epidemic. The implication of this finding is that demographic factors should be considered when evaluating telehealth patient satisfaction; without analysis of patient satisfaction with telehealth, conflicting or erroneous results may be obtained (Ostovari et al., 2023). Some patients indicated being quite pleased with their treatment, whereas others had serious issues with the staff's responsiveness and the quality of their interactions with them. Therefore, the relevance of understanding the complex character of patient satisfaction in telehealth is highlighted by the discovery in this study that the connection between telehealth follow up for mental health services and patient

satisfaction in metropolitan regions of California during 2020–2022 is not significant. This result highlights the need for individualized techniques to improve patient experience in telehealth for mental health services in urban locations and further study on the unique aspects that impact patient satisfaction in urban telehealth settings.

The finding from the hypothesis test for RQ3 indicate there is an association between patient encounter location and patient satisfaction in the context of the provided predictor variables. The provided output suggests an association between patient encounter location and patient satisfaction. However, the specific associations for different encounter locations may vary. Therefore, I rejected the null hypothesis and concluded there was an association between encounter location for behavioral health telehealth services and patient satisfaction in rural and urban areas between 2020 and 2022. This discovery challenges the notion that patient satisfaction remains consistent across all encounter locations. The implication of this finding is that the specific characteristics of these encounter locations can influence patients' perceptions and experiences. The rejection of the null hypothesis indicates a significant association between encounter location and patient satisfaction. This finding underscores the findings of other studies, such as Barker et al. (2023) who concluded there is a need for healthcare providers and policymakers to consider location-specific factors when designing and implementing telehealth services. Understanding these associations can lead to more tailored approaches to enhance overall patient experience and outcomes. Therefore, it is important for medical practitioners to consider factors such as travel distance and limited

healthcare infrastructure, which can affect patient satisfaction and engagement in telehealth.

Rasekaba et al., (2022) explored how telehealth can bridge geographical gaps in healthcare access and stressed the importance of tailoring telehealth programs in meeting the specific needs and preferences of patients in different locations. Rasekaba et al. (2022) also highlighted the need for attention to socioeconomic determinants of health within telehealth programs. In both rural and urban settings, there may be substantial variations in patient satisfaction and engagement with telehealth services due to factors such as socioeconomic position, cultural diversity, and healthcare literacy. Mohd et al. (2022) focused on socioeconomic factors and the findings are consistent with those of Barker et al. (2023) and Rasekaba et al. (2022). According to Mohd et al., targeted approaches to telehealth services in rural and urban locations are needed given the link between patient encounter location and patient satisfaction within the context of the predictor factors presented. Therefore, this study underscores the relevance of fairness and accessibility in telehealth deployment and sets the path for further research on the particular characteristics that influence patient satisfaction in diverse locales.

Limitations of the Study

I experienced a few limitations during this study. The lack of statistics comparing the quality of healthcare in urban areas to that in rural areas was one of the main obstacles. Due to the large number of duplicate entries for the same patient throughout the year, the valid sample size for analysis significantly decreased to about 149 patient records after removing duplicates. It was also difficult to get patient input on their visit

preferences and experiences. Knowing how satisfied patients were and what they wanted from their next appointment relied heavily on this hidden information. Some patients lacked access to modern technologies such as cell phones, PCs, and laptops, which hindered my data collection efforts. There was also skepticism that doctors would be ready to provide prohibited medications or mental therapies through telehealth.

Patient diversity posed problems, especially in terms of patients' access to confidential settings for healthcare consultations. Because of these caveats, generalization of the study's findings to the population at large is precluded. I used several methods to improve the study's dependability despite these constraints. First, I included people of all ages and evaluated a number of characteristics, such as their familiarity with and ability to use technology, connection, internet use, access to and use of mobile devices, and internet capacity. My goal was to acquire a deeper insight into the constraints and hurdles by ensuring representation from a varied cross-section of the population and by addressing these variables.

In addition, I made precautions to reduce the impact of the participants' awareness of being watched on the results of the research. I also ensured ecological validity by simulating natural settings as precisely as possible to reduce their impact on treatment interactions and population responses. The research had certain limitations, but I made precautions to lessen their effect and improve the validity of the results. Diversifying the sample size, removing technical challenges, and reducing the impact of onlookers and their surroundings were all part of the plan.

Recommendations

Reevaluate Resource Allocation and Quality Improvement Strategies

Mental healthcare administrators need to rethink how they are allocating resources considering the finding from the current study that the sorts of telehealth encounters for mental health treatments is not correlated with wait times in rural suburbs. According to Hilty et al. (2020), investment in other areas of healthcare services that may have a more direct influence on patient satisfaction should be better used instead of exclusively focused on enhancing telehealth availability. Quality improvement methods for in-person and telehealth services should be a top priority for healthcare organizations. It is crucial to improve the patient experience by ensuring that all healthcare personnel get consistent and complete training in telehealth methods and equipment, as suggested by Berwick and Fox (2016).

Standardized Screening Process

A patient's preparedness and appropriateness for telehealth visits may be better determined using a systematic screening procedure. This procedure would reveal their level of technical proficiency, the availability of necessary equipment, and the kind of telehealth visit they need (Yang et al., 2020). The measure is an effort to reduce patient concerns by increasing appointment attendance.

Consider Demographic Factors and Addressing Socioeconomic Disparities

As Monaghesh and Hajizadeh (2020) pointed out, demographic characteristics affect both telehealth use and satisfaction. Focusing on the unique requirements of urban populations is needed while designing telehealth services and initiatives. Furthermore, as

Rasekaba et al. (2022) and Mohd et al. (2022) underlined, it is important to recognize and resolve socioeconomic differences. To use this tactic, telehealth programs should be made accessible to people of diverse socioeconomic backgrounds. This includes reaching out to patients of every age, education level, region, and ethnicity. The ability to continue educating patients with the benefits and the ability to access care from the convenience of their home can certainly help increase patient satisfaction, will help them connect with their Provider in a timelier manner and get the care they need.

Enhance Communication

Healthcare practitioners should value excellent communication and rapport building during virtual meetings due to the difficulties connected with the lack of face-to-face contacts in mental telehealth consultations (Barker et al., 2023). Improved patient satisfaction may result from the use of methods that encourage open communication.

Continued Research

As Chen et al. (2021) explained, it is important to keep investigating the many factors that contribute to patient satisfaction while using mental telehealth services. The correlation between the site of patient encounters and patient satisfaction calls for more research on the precise components that impact patient satisfaction in various settings.

Tailored Telehealth Programs

Mental health hospitals using telehealth need to develop telehealth programs that cater to the unique characteristics of rural and urban areas. They should consider factors such as travel distance, healthcare infrastructure, and access to technology when designing and implementing telehealth services (Al-Samarraie et al., 2020).

Implications for Professional Practice and Social Change

This study is significant in that the inequalities and disparities seen in patient care with Telehealth services can be understood better and improved in the years to come. The key thing to focus here is on how to improve the access to patient care with Telehealth so all patients regardless of their location, age, education level can have equitable access to care (NCCDPHP, 2022).

My goal as a Healthcare Administrator is to bring the positive social change by utilizing the knowledge gained from the research conducted in this study to share with Healthcare Leaders and Physicians and help them get trained on how to provide Telehealth care if they don't have the training and training all staff so they can further educate the patients on how to best utilize Telehealth services.

I would also establish methods so all patients are screened before an appointment is booked so they understand how to access the Telehealth services correctly which will also increase their overall satisfaction with the appointment. This will also increase the patient's ability to get an appointment sooner with the Doctor's office compared to having to wait a long time to see them in person. Training staff on how to properly review insurances and verifying eligibility for Telehealth services would also aid in bringing in the positive social change. Verifying eligibility ahead of time would ensure a timely payment will be made and no cost issues occur for the patients.

In conclusion, no patient should be turned away due to limitations of Telehealth services and modalities should be made for patients who have a tough time reaching the providers

whether it is for Chronic Disease Management or Behavioral/Psychiatric issues (Telehealth.HHS.Gov, 2022).

Conclusion

I am genuinely humbled with this research study as it helped me see the challenges and barriers regarding access to care especially around Telehealth services. Telehealth services are an essential part of Healthcare services and efforts should be made to train all Providers across the board regardless of their specialization. From Primary Care to Surgical services, everyone can benefit through Telehealth services because these appointments allow the patients to have a health concern be questioned in a timely manner or if an intervention is needed which will also help decrease dissatisfaction in patient care along with influx in emergency rooms for minor issues which could easily be handled at the Provider's office level.

I also learned that the barriers to Telehealth need to be tackled by improving education for the patients as well and Healthcare organizations should not assume rather train or have workshops on the benefits of this service modality. This will help decrease patient dissatisfaction when using Telehealth services and allow for a better connection with their Provider's care team.

At the end, I would like to conclude by stating that I am grateful for being a part of the Walden's Doctoral Program as it has greatly shaped my view for contributing to healthcare. Throughout my curriculum, I was able to gain several different types of skills such as leadership, communication, public speaking, and conflict management that I hope

to use in my career in the future and aim to become a strong Healthcare Leader and advocate for the positive social change that our community needs. Thank you.

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Appendix A: Permission Letter

DATA USE AGREEMENT

This Data Use Agreement ("Agreement"), effective as of (08/01/23) ("Effective Date"), is entered into by and between (Jasleen Kaur.) ("Data Recipient") and (Peach Tree Healthcare represented by Sarbjit Gill, EHR Manager) ("Data Provider"). The purpose of this Agreement is to provide Data Recipient with access to a Limited Data Set ("LDS") for use in research in accord with the HIPAA and FERPA Regulations.

1. Definitions. Unless otherwise specified in this Agreement, all capitalized terms used in this Agreement not otherwise defined have the meaning established for purposes of the "HIPAA Regulations" codified at Title 45 parts 160 through 164 of the United States Code of Federal Regulations, as amended from time to time.

2. Preparation of the LDS. Data Provider shall prepare and furnish to Data Recipient a LDS in accord with any applicable HIPAA or FERPA Regulations.

3. Data to be included in the LDS. **No direct identifiers such as names may be included in the Limited Data Set (LDS).** The researcher will not name the Data Provider in the doctoral study that is published in Proquest unless the Data Provider makes a written request for the researcher to do so. In preparing the LDS, Data Provider or designee shall include the **data fields specified as follows**, which are the minimum necessary to accomplish the research:

Specific data points from the sources: The rural/urban areas in Sacramento/Yolo Counties, year from 2020-2022, Encounter location being from 95901, 95339, and 95835 zip code, Telehealth service type such as live audio/video, other telehealth, remote patient monitoring, and store and forward services, along with the wait time for appt along with patient satisfaction and preference.

4. Responsibilities of Data Recipient. Data Recipient agrees to:

a. Use or disclose the LDS only as permitted by this Agreement or as required by law;

b. Use appropriate safeguards to prevent use or disclosure of the LDS other than as permitted by this Agreement or required by law;

c. Report to Data Provider any use or disclosure of the LDS of which it becomes aware that is not permitted by this Agreement or required by law;

d. Require any of its subcontractors or agents that receive or have access to the LDS to agree to the same restrictions and conditions on the use and/or disclosure of the LDS that apply to Data Recipient under this Agreement; and

e. Not use the information in the LDS to identify or contact the individuals who are data subjects.

5. Permitted Uses and Disclosures of the LDS. Data Recipient may use and/or disclose the LDS for its research activities only.

6. Term and Termination.

a. Term. The term of this Agreement shall commence as of the Effective Date and shall continue for so long as Data Recipient retains the LDS, unless sooner terminated as set forth in this Agreement.

b. Termination by Data Recipient. Data Recipient may terminate this agreement at any time by notifying the Data Provider and returning or destroying the LDS.

c. Termination by Data Provider. Data Provider may terminate this agreement at any time by providing thirty (30) days prior written notice to Data Recipient.

d. For Breach. Data Provider shall provide written notice to Data Recipient within ten (10) days of any determination that Data Recipient has breached a material term of this Agreement. Data Provider shall afford Data Recipient an opportunity to cure said alleged material breach upon mutually agreeable terms. Failure to agree on mutually agreeable terms for cure within thirty (30) days shall be grounds for the immediate termination of this Agreement by Data Provider.

e. Effect of Termination. Sections 1, 4, 5, 6(e) and 7 of this Agreement shall survive any termination of this Agreement under subsections c or d.

7. Miscellaneous.

a. Change in Law. The parties agree to negotiate in good faith to amend this Agreement to comport with changes in federal law that materially alter either or both parties' obligations under this Agreement. Provided however, that if the parties are unable to agree to mutually acceptable amendment(s) by the compliance date of the change in applicable law or regulations, either Party may terminate this Agreement as provided in section 6.

b. Construction of Terms. The terms of this Agreement shall be construed to give effect to applicable federal interpretative guidance regarding the HIPAA Regulations.

c. No Third-Party Beneficiaries. Nothing in this Agreement shall confer upon any person other than the parties and their respective successors or assigns, any rights, remedies, obligations, or liabilities whatsoever.

d. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

e. Headings. The headings and other captions in this Agreement are for convenience and reference only and shall not be used in interpreting, construing or enforcing any of the provisions of this Agreement.

IN WITNESS WHEREOF, each of the undersigned has caused this Agreement to be duly executed in its name and on its behalf.

DATA PROVIDER

Signed: Sarbjit Gill

Print Name: Sarbjit Gill

Print Title: EHR Program Manager

DATA RECIPIENT

Signed: Jasleen Kaur

Print Name: Jasleen Kaur

Print Title: DHA Student - Researcher