Examining the Effect of the COVID-19 Pandemic on Patient Experience Rating and Recommendation: A Longitudinal Study

Emoy Reid

Follow this and additional works at: https://scholarworks.gsu.edu/bus_admin_diss

Recommended Citation
doi: https://doi.org/10.57709/36998564

This Dissertation is brought to you for free and open access by the Programs in Business Administration at ScholarWorks @ Georgia State University. It has been accepted for inclusion in Business Administration Dissertations by an authorized administrator of ScholarWorks @ Georgia State University. For more information, please contact scholarworks@gsu.edu.
PERMISSION TO BORROW

In presenting this dissertation as a partial fulfillment of the requirements for an advanced degree from Georgia State University, I agree that the Library of the University shall make it available for inspection and circulation in accordance with its regulations governing materials of this type. I agree that permission to quote from, copy from, or publish this dissertation may be granted by the author or, in her absence, the professor under whose direction it was written or, in his absence, by the Dean of the Robinson College of Business. Such quoting, copying, or publishing must be solely for scholarly purposes and must not involve potential financial gain. It is understood that any copying from or publication of this dissertation that involves potential gain will not be allowed without written permission of the author.

Emoy M. Reid
NOTICE TO BORROWERS

All dissertations deposited in the Georgia State University Library must be used only in accordance with the stipulations prescribed by the author in the preceding statement.

The author of this dissertation is:
Emoy M. Reid
J. Mack Robinson College of Business
Georgia State University
Atlanta, GA 30302-4015

The director of this dissertation is:

Dr. Wesley Johnston
J. Mack Robinson College of Business
Georgia State University
Atlanta, GA 30302-4015
Examining the Effect of the COVID-19 Pandemic on Patient Experience Rating and Recommendation: A Longitudinal Study

by

Emoy M. Reid

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree

Of

Executive Doctorate in Business

In the Robinson College of Business

Of

Georgia State University

GEORGIA STATE UNIVERSITY

ROBINSON COLLEGE OF BUSINESS

2024
ACCEPTANCE

This dissertation was prepared under the direction of the EMOY M. REID Dissertation Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Business Administration in the J. Mack Robinson College of Business of Georgia State University.

Richard Phillips, Dean

DISSERTATION COMMITTEE

Dr. Wesley Johnston(Chair)

Dr. Christopher Campagna

Dr. Aaron Baird

Dr. Likoebe Maruping
DEDICATION

To my beloved mother, Sandra Rodriques, your unwavering support and love have been the driving force behind my every achievement. Your selflessness, kindness, and compassion inspire me daily to be a better person. I am forever grateful for the sacrifices you’ve made for my sister and me. Your strength and resilience in the face of adversary are a constant source of motivation and inspiration. Thank you for being my rock, my confidante, and my best friend. I love you, mom!
ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to the following individuals who have supported and guided me throughout my research and academic journey:

First and foremost, I would like to thank my chair, Dr. Wes Johnston, for his unwavering support, guidance, and mentorship. Your expertise and encouragement have been invaluable to me. I would also like to extend my appreciation to Dr. Chris Campagna, Dr. Aaron Baird, and Dr. Likoebe Maruping, whose contributions and insights have significantly enhanced my research and understanding of the field.

I would like to acknowledge the unwavering support from and belief of my family, particularly my children Kamari and Aaysia, who have been my motivation and inspiration throughout this journey. My sister, Saphia, thank you for your constant encouragement and faith in me, as well as my fiancé, for his support and patience throughout this process.

Additionally, I would like to acknowledge the support and camaraderie of my cohorts and group members, Dr. Derek Marbell and Dr. Chris Edwards, who have been sources of strength and motivation throughout our shared academic endeavors.

Finally, I would like to acknowledge the support and resources provided by Georgia State University, which have enabled me to pursue my research interests and goals.

Thank you all for your contributions, support, and guidance. I am grateful for your presence in my academic and professional life.
# TABLE OF CONTENTS

ACKNOWLEDGEMENTS .................................................................................................................... v

LIST OF TABLES .................................................................................................................................. ix

LIST OF FIGURES ............................................................................................................................... xi

I  INTRODUCTION ................................................................................................................................. 1

  I.1 Background .................................................................................................................................... 1

  I.2 Research Problem and Question .................................................................................................... 2

  I.3 Theoretical Framework .................................................................................................................. 4

  I.4 Structure and Expected Contribution ........................................................................................... 5

II  LITERATURE REVIEW ...................................................................................................................... 8

  II.1 Patient Experience ........................................................................................................................ 8

    II.1.1 Measuring Patient Experience ............................................................................................... 10

  II.2 Patient Experience and COVID .................................................................................................. 12

    II.2.1 The COVID Pandemic ........................................................................................................... 12

    II.2.2 COVID and Healthcare ......................................................................................................... 13

    II.2.3 Patient Experience, COVID, and Healthcare ...................................................................... 14

    II.2.4 Patient Experience, COVID and In-patient ....................................................................... 16

III  CONCEPTUAL FRAMEWORK AND HYPOTHESES .................................................................... 20

  III.1 Hypotheses and Research Model ............................................................................................. 21

IV  METHODOLOGY .............................................................................................................................. 23

  IV.1 Research Design ........................................................................................................................... 23

  IV.2 Data Collection, Instrument, and Variables ............................................................................. 23

  IV.3 Independent Variables ............................................................................................................... 24

  IV.4 Dependent Variables .................................................................................................................. 25
V RESULTS AND ANALYSIS .................................................................................................................. 26
V.1 Pre-COVID Descriptive Statistics ................................................................................................. 27
  V.1.1 Measurement Model ................................................................................................................ 27
  V.1.2 Structural Model ..................................................................................................................... 33
V.2 Pre-COVID Hypotheses ............................................................................................................... 34
V.3 COVID Descriptive Statistics ..................................................................................................... 36
  V.3.1 Measurement Model ................................................................................................................ 37
  V.3.2 Structural Model ..................................................................................................................... 39
V.4 COVID Hypotheses ....................................................................................................................... 40
  V.4.1 Descriptive Statistics-COVID Units ....................................................................................... 44
  V.4.2 Measurement Model-COVID Unit .......................................................................................... 45
  V.4.3 Structural Model ..................................................................................................................... 47
V.5 COVID Units Hypotheses ............................................................................................................. 47
VI DISCUSSION, CONTRIBUTIONS AND LIMITATIONS ................................................................. 50
VI.1 Introduction ............................................................................................................................... 50
VI.2 Pre-COVID Discussion ............................................................................................................... 53
VI.3 COVID and COVID Unit Discussion .......................................................................................... 58
VI.4 Discussion Summary .................................................................................................................. 63
VI.5 Practical Contribution ................................................................................................................ 66
VI.6 Theoretical Contribution .......................................................................................................... 70
VI.7 Limitation and Future Research ................................................................................................ 71
APPENDIX: SURVEY QUESTIONS .................................................................................................... 73
REFERENCES ...................................................................................................................................... 74
VITA .................................................................................................................................................... 84
LIST OF TABLES

Table 1 Research Study Elements ............................................................................................................. 7
Table 2 HCAHPS Indicators Aligned with SERVQUAL Dimensions .......................................................... 21
Table 3 Descriptive Statistics for Patient Experience Construct-Pre-Covid .............................................. 27
Table 4 Pre-COVID Factor Loadings ........................................................................................................ 30
Table 5 Construct Reliability Analysis (Cronbach Alpha and Composite Reliability) ......................... 31
Table 6 Construct Convergent Validity (AVE) ........................................................................................... 31
Table 7 Fornell & Larcker Criterion ........................................................................................................ 32
Table 8 Heterotrait-monotrait Ratio (HTMT) .......................................................................................... 33
Table 9 Statistics as Related to Hypotheses ............................................................................................. 35
Table 10 Descriptive Statistics for Patient Experience Construct COVID ............................................ 37
Table 11 Construct Reliability Analysis (Cronbach Alpha and Composite Reliability) ....................... 38
Table 12 Construct Convergent Validity (AVE) ....................................................................................... 38
Table 13 Fornell & Larcker Criterion ...................................................................................................... 39
Table 14 Heterotrait-monotrait Ratio (HTMT) ......................................................................................... 39
Table 15 Statistics related to Covid Hypotheses ....................................................................................... 41
Table 16 Structural Equation Modeling Test Results: Pre-COVID and COVID .................................... 43
Table 17 Structural Model Pathway Difference: Pre-COVID vs COVID ............................................... 44
Table 18 Descriptive Statistics for Patient Experience Construct- COVID Units ................................... 45
Table 19 Construct Reliability Analysis (Cronbach Alpha and Composite Reliability) ....................... 45
Table 20 Construct Convergent Validity (AVE) ....................................................................................... 46
Table 21 Fornell & Larcker Criterion ...................................................................................................... 46
Table 22 Heterotrait-monotrait Ratio (HTMT) ......................................................................................... 47
Table 23 Results Utilizing the Structural Model ..................................................................................... 49
Table 24 Hypotheses Results Pre- and During COVID
LIST OF FIGURES

Figure 1 Research Model ................................................................. 21

Figure 2 Pre-COVID Structural Model ............................................. 36

Figure 3 COVID Structural Model ................................................... 42

Figure 4 Structural Model for COVID Units ..................................... 49
ABSTRACT

Examining the Effect of the COVID-19 Pandemic on Patient Experience Rating and Recommendation: A Longitudinal Study

by

Emoy M. Reid

April 2024

Chair: Dr. Wesley Johnston

Major Academic Unit: Executive Doctorate in Business

As measured by interactions with doctors, nurses, and other staff, patient experience is a crucial indicator of quality of care. Hospital leadership is faced with the continued challenge of improving patient experience on a day-to-day basis. The COVID-19 pandemic further exacerbated an industry already riddled with many obstacles that prevented desired patient outcomes. With incentives, reimbursements, and the hospital's reputation tied to these publicly reported scores, the improvement of patient experience is a top priority.

This longitudinal quantitative study, guided by the SERVQUAL theory, investigates the comparative impact of pre-COVID and COVID-19 pandemic periods on patient experiences, overall hospital ratings, and recommendations for hospitals. The practical implications of this study provide healthcare administrators with crucial patient experience indicators to prioritize during disruptions such as pandemics. Awareness of those indicators will facilitate disaster preparedness planning and help to mitigate risks that compromise patient outcomes and experiences. Moreover, this study contributes to the existing literature on patient experience by offering a comprehensive comparison of pre-COVID and COVID-19 periods, elucidating their impacts on hospital ratings and the likelihood of positive patient recommendations.
INDEX WORDS: Patient Experience, COVID-19 Pandemic, Hospital Rating, Patient Recommendation
I INTRODUCTION

I.1 Background

Analysis of the patient experience has changed the way healthcare organizations deliver care. Widely known and accepted as one of the key indicators of quality of care, the patient experience encompasses all aspects of interactions the patient has with the health system, ranging from their health plans, communications with clinical and non-clinical staff, physician practices, and any other healthcare facilities. While the patient experience has been an integral component of judging healthcare quality for the past three decades, it still poses a concern for many healthcare senior executives and managers in the hospital setting. Scores reflecting patient experience hold significant value, as they are linked to hospital reimbursement and mandated by the Centers for Medicare and Medicaid Services’ (CMS) value-based purchasing program, as well as private-payer initiatives. Many challenges impact the delivery of patient-centered care, including a lack of common understanding of teamwork and individual and organizational barriers (Esmaeili et al., 2013). Healthcare executives and clinical managers know the importance of the patient’s experience in healthcare, that it is both multi-faceted and holds significant value. From their standpoints, patient experience is key due to:

- **Quality of Care**: Health executives and clinical managers recognize that patient experience is intricately linked to the quality of care provided by healthcare organizations. A great deal of prior research has shown that hospitals with high levels of patient care experience also perform better on other clinical metrics (Luxford & Sutton, 2014). Positive patient experiences often correlate with better health outcomes, improved patient satisfaction, and higher levels of adherence to treatment plans. By prioritizing patient experience, executives and managers can ensure that the care delivered aligns with patient expectations and meets the highest quality standards.

- **Patient-Centered Approach**: Understanding patient-centered care is the first step to improving patient experience (Agency for Healthcare Research and Quality (AHRQ), n.d.). Dedication to superior patient-centered care is a core principle that healthcare executives and clinical managers strive to uphold. Putting patients at the center of care delivery means actively involving them in decision-
making processes, understanding their unique needs and preferences, and providing them with personalized care. Emphasizing patient experience supports the patient-centered approach, fostering trust, engagement, and decision making shared by healthcare providers and patients.

- Staff Engagement and Retention: The patient’s experience extends beyond direct interaction between patients and healthcare providers; it also encompasses the overall organizational culture, teamwork, and employee satisfaction. Executives and managers recognize that fostering a positive patient experience culture can lead to higher staff engagement, job satisfaction, and retention rates. Engaged and satisfied staff members are more likely to deliver excellent care and create positive patient experiences. Equally important, executives and managers are also aware that patients value engaged care providers. When surveyed, seventy-five percent of consumers considered staff engagement measures such as nurse communication and doctor communication as priorities in their care experience (Birkelien, 2017).

- Continuous Improvement and Innovation: Patient experience data and feedback provide valuable insights for continuous improvement and innovation in healthcare delivery. Increasingly, the patient’s viewpoint is considered a crucial measure of healthcare service quality (Andaleeb, 2001). Executives and managers can use patient experience data to identify areas of improvement, address gaps in care delivery, and implement innovative solutions. By integrating patient feedback into their decision-making processes, healthcare organizations can drive positive changes that enhance patient experience and overall care quality.

- Reputation and Market Competitiveness: Positive patient experiences contribute to building a favorable reputation for healthcare organizations. When patients have such experiences, they are not only more likely to recommend the organization to others, leading to increased patient volume and market competitiveness, but also become return customers themselves. This idea is consistent with other healthcare industries that have found that there is a positive relationship between patient satisfaction and return-to-provider rate and loyalty (Richter & Muhlestein, 2017). In contrast, negative patient experiences can harm the reputation of healthcare organizations and hinder their ability to attract and retain patients. Executives and managers understand the direct impact patient experience has on the organization’s brand, image, and long-term success, as well as quality of care; thus, healthcare leaders are always actively seeking ways to enhance and improve patient experiences.

I.2 Research Problem and Question

The healthcare industry is faced with daily challenges generated by rising healthcare costs, limits in access to care, ineffective implementation of health information management and technology, an aging patient population, and a healthcare workforce shortage. To further
exacerbate an already overburdened industry, the COVID-19 pandemic occurred. The impact of the Novel Coronavirus was felt globally in every industry; however, the healthcare industry was affected the most (Hendsun, 2022).

COVID-19 pandemic disrupted every industry worldwide. In the healthcare industry, this disruption created:

- Increased patient demands
- Staffing challenges
- Cancellation of non-emergency services
- Financial impact: According to the American Hospital Association, in the U.S., the healthcare industry experienced $202.6 billion in lost revenue (Kaye et al., 2020).
- Psychosocial impact
- Rapid adaptation and change to provide remote care
- Disparities in health outcome

Each of these elements impacted all aspects of the patient’s experience.

When businesses are unable to provide the services, their customers expect to receive, the reputations of those businesses are at stake. Customers show their satisfaction or dissatisfaction through ratings and recommendations of a business which, in turn, provides valuable feedback and information to other potential customers to help them make informed decisions. Ratings enable customers to assess the quality, reliability, and reputation of businesses, influencing their trust, satisfaction, and likelihood of engaging with those organizations, while also incentivizing them to strive for excellence in their products and services.

In healthcare, hospital ratings are of particular importance due to the prevalence of medical errors. The Institute of Medicine (IOM) published a report in 1999 titled "To Err is Human: Building a Safer Health System.” According to the report, errors in American hospitals lead to between 44,000 and 98,000 deaths annually, along with over one million injuries (Stelfox, 2006), highlighting the need for more rigorous evaluation of quality. The CMS
HCAHPS Star Rating system represents a widely recognized comprehensive evaluation of hospital quality, determined by assessing performance across domains that include mortality rates, readmission rates, patient safety measures, patient satisfaction, and the timeliness and effectiveness of care (Centers for Medicare & Medicaid Services, n.d.), which provides a framework for assessing patient experiences and care outcome. By examining HCAHPS ratings, healthcare leaders can identify areas for improvement and implement strategies to reduce medical errors and improve patient safety. The recommendation of a business by the consumer is also of noteworthy mention. When a consumer recommends a business, an opportunity is created to influence the choices and decisions of other individuals as a positive recommendation builds trust in and the credibility of the business. In healthcare, recommendations from family and friends become important sources of information for patients when choosing their healthcare providers (Cheng et al., 2003).

Against this backdrop, this research focused on answering the research questions:

What was the effect of the COVID-19 pandemic on changing patient experience and the rating of the hospital?

What was the effect of the COVID-19 pandemic on changing patient experience and the likelihood to recommend the hospital to friends and family?

Gathering input from patients and involving them in their care and healthcare provision offer chances to identify and rectify aspects of the care experience requiring enhancement. Moreover, it enables the monitoring of performance to ensure the attainment of patient experience objectives in care delivery.

I.3 Theoretical Framework

An analysis of patient experience was completed using the elements of the Service Quality (SERVQUAL) theory. Service quality refers to the extent to which a service meets or
exceeds customer expectations. According to that theory, the process entails contrasting customer-anticipated experience with what was actually provided by the staff. It suggests that assessing whether a service was subpar, outstanding, or satisfactory hinges upon evaluating services within the framework of consumer expectations:

(a) When the anticipated service (ES) surpasses the perceived service (PS), the perceived quality falls below satisfactory and tends toward unacceptable quality, with a growing disparity between ES and PS.

(b) When ES equals PS, the perceived quality is satisfactory

(c) When ES is less than PS, the perceived quality exceeds satisfactory and tends toward ideal quality, with an increasing gap between ES and PS.

Service quality is crucial to establishing customer loyalty, positive word-of-mouth, and long-term success for service-oriented businesses (Garrard & Narayan, 2013).

I.4 Structure and Expected Contribution

The purpose of this review was to examine the effect of the COVID-19 pandemic on patient experience, hospital ratings and patient recommendations of the hospital to friends and family. To understand the impact of this disruption on the patient’s experience and the way it influences how patients rate the hospital, the following chapters are aimed at answering the research question:

*What was the effect of the COVID-19 pandemic on changing the patient experience and the rating of the hospital?*

Further, with the goal of understanding the way in which the patient’s experience explains whether or not they would recommend the hospital to their friends and family, the following chapters are also aimed at answering the second research question:
What was the effect of the COVID-19 pandemic on changing patient experience and the likelihood to recommend the hospital to friends and family?

Chapter 2 examines previous research pertaining to patient experience, the impact of the COVID-19 pandemic, identified gaps in the literature, and the utilization of SERVQUAL theory as a conceptual framework. Chapter 3 establishes the theoretical foundation for the study and presents the relevant hypotheses to be tested, aiming to explain the relationship between patient experience, hospital ratings, and the likelihood of positive recommendations before and during the COVID-19 pandemic. Chapter 4 details the study's design, which involves surveys with patients in the hospital's inpatient setting both before and during the COVID-19 pandemic to address the research question, as well as discussing the data collection process, describing the sample, presenting the study results, and conducting an analysis informed by the findings of the literature review. In Chapter 5, the findings derived from data analysis are assessed and discussed, and their implications and contributions to existing theory explored. This will also include an evaluation of the limitations of the study. Finally, in Chapter 6, there will be a reflection on the generalizability of the data and recommendations for future research endeavors.

The organization of this research, in addition to the application of the research element format established by Mathiassen et al. (2012) and seen in Table 1, adds clarity and structure to the argument regarding the COVID-19 pandemic’s impact on the patient’s experience, its indicators, rating of the hospital and their recommendation of the hospital to friends and family. More insights into the COVID-19 pandemic effects on patient experience are salient to understanding what indicators drive patient recommendation of the hospital and rating of the hospital.
Table 1 Research Study Elements

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>Understanding the experience of patients provides insight into healthcare and provides key, fundamental, steps toward partnering with patients and families to drive improvement. Patient experience is also an integral component of healthcare quality but still poses a concern for many healthcare senior executives in the hospital as patient experience scores are tied to hospital reimbursement and required by Centers for Medicare and Medicaid Services (CMS) value-based purchasing program and private payer initiatives. Patient experience not only impacts clinical outcomes but also how patients’ rate and recommend the hospital.</td>
</tr>
<tr>
<td>A</td>
<td>The COVID-19 pandemic caused global disruptions in every industry. While the pandemic’s impact on patient experience has been studied across many specialties and areas in healthcare, a comparative, longitudinal, view on its impact in the inpatient setting while providing a focus on COVID patients and how they rate and recommend the hospital has not been done.</td>
</tr>
<tr>
<td>F</td>
<td>Modified SERVQUAL Theory will be used to frame the research to assess the patient’s perceptions of service quality using dimensions that align with those of the HCAHPS survey domain.</td>
</tr>
<tr>
<td>M</td>
<td>HCAHPS survey (quantitative) using patient responses distributed by Press Ganey</td>
</tr>
<tr>
<td>RQ</td>
<td>What was the effect of the COVID-19 pandemic on changing patient experience, their rating of the hospital, and the likelihood to recommend the hospital to friends and family?</td>
</tr>
<tr>
<td>C</td>
<td>CP - The practical implications of this study provide healthcare administrators with crucial patient experience indicators to prioritize during disruptions such as pandemics. This facilitates disaster preparedness planning and helps to mitigate risks that compromise patient outcomes and experiences. Additionally, governmental agencies, such as the Centers for Disease Control and Prevention (CDC, 2021), can utilize these findings to enhance their recommended operational strategies for healthcare facilities. CA- This study contributes to the existing literature on patient experience by offering a comprehensive comparison of pre-COVID and COVID-19 periods, elucidating their impacts on the rating of the hospital and the likelihood of a positive patient recommendation.</td>
</tr>
</tbody>
</table>
II LITERATURE REVIEW

This chapter will first examine the literature on patient experience, its indicators, and how it is measured. I will then turn the focus to discussing prior research on the ways in which the COVID-19 pandemic impacted the patients' experiences while highlighting the settings and/or specialties in which each study was done, the patient experience indicators assessed in these studies, the data timeframe used for analysis and whether the data used reflect patients who were COVID positive or COVID negative. Next, I will bring to light the gap in the literature and then tie in the SERVQUAL theory to frame our research. The chapter will then segue to the methodology section to discuss the design of this study.

This current research examined the effects that COVID-19 pandemic had on patient experience, their rating of the hospital, and their recommendations to friends and family. Its focus was on the aforementioned relationships before and during the COVID-19 pandemic in the inpatient setting. Emphasis was also be placed on examining the patient experience of COVID-19-designated units, which is not a topic thus far discussed in peer-reviewed journals. Additionally, while many journal articles discuss some aspects of this research in tandem, no research found provided a comprehensive examination of the effects of the COVID-19 pandemic, before its emergence and during, on patient experience, rating of the hospital, and recommendation of the hospital to friends and family. The literature review is centered on keywords addressing COVID-19 and patient experience.

II.1 Patient Experience

Comprehending patients' experiences offers valuable insights into healthcare and constitutes essential initial measures in collaborating with patients and families to foster improvement. Research has demonstrated a correlation between patient experience and clinical
outcomes, indicating that hospitals achieving high scores in patient care experience surveys also exhibit superior performance in clinical indicators (Luxford & Sutton, 2014). There have been many discussions on the appropriate definition of patient experience. Wolf et al. (2014) argued that, within the healthcare industry, there is considerable divergence in perspectives when it comes to defining patient experience. For this research, we will use the Beryl Institute’s (n.d.) definition, i.e., patient experience is the sum of all interactions shaped by an organization's culture, which influences patient perceptions across the continuum of care. It is important to highlight here that the terms patient satisfaction and patient experience, though frequently used interchangeably, are not the same. To evaluate patient experience, it is necessary to speak to or survey patients directly about the occurrence and frequency of specific events within a healthcare setting, such as effective communication with healthcare providers. Satisfaction, however, pertains to whether a patient's expectations regarding a healthcare encounter were fulfilled. Even if two individuals receive identical care, their satisfaction ratings can differ, based on their unique expectations of how that care should be delivered (AHRQ, n.d.). An important point to consider is the contrasting perspectives regarding the relationship between satisfaction and patient experience, whereby, from some views, satisfaction is conceptualized and studied as a determinant of patient experience, while alternative formulations position patient experience as a component of satisfaction. This can create ambiguity around the concept and occasionally lead to unjustified criticism of patient experience measures. The suitable conceptual perspective may vary, depending on the level at which patient feedback is being examined (Ahmed et al., 2014). Therefore, in this research, we will be investigating patient satisfaction as a factor of patient experience.
The idea of patient experience was introduced in 1985 by Notre Dame professors Press and Ganey as part of a survey used by a handful of hospitals to measure that concept. In 2002, as the need to assess the patient’s experience grew due to its relationship with quality of care, the federal government became active in that area. That year, the Center for Medicaid Medicare Services (CMS) and the Agency for Healthcare Research and Quality (AHRQ) collaborated, researched, developed, and tested the Hospital Consumer Assessment of Healthcare Providers and Systems or HCAHPS (pronounced H-CAPS) (Siegrist, 2013). As stated, HCAHPS is a survey instrument and data collection methodology for measuring patients’ perceptions of their hospital experience.

II.1.1 Measuring Patient Experience

The measurement of patient experience holds significance as it enables care improvement, informs strategic decision making, allows hospitals and staff to meet patient expectations, and effectively manages healthcare organizations while monitoring their performance. It also facilitates process improvement, enhances clinical outcomes, optimizes resource utilization, and promotes safety. In the U.S., the HCAHPS survey is the standard instrument used for measuring patient experience. The survey contains a total of 29 questions, with 19 core questions focused on key aspects of the patients’ hospital experiences and is as follows:

- HCAHPS Composites:
  - Communication with Nurses (Q1, Q2, Q3)
  - Communication with Doctors
  - Responsiveness of Hospital Staff (Q4, Q11)
  - Communication about Medicines (Q16, Q17)
  - Discharge Information (Q19, Q20)
  - Care Transition (Q23, Q24, Q25)

- HCAHPS Individual Items
  - Cleanliness of Hospital Environment (Q8)
• Quietness of Hospital Environment (Q9)

HCAHPS Global Items
  • Overall Hospital Rating (Q21)
  • Recommend the Hospital (Q22)

Composite questions typically ask patients to indicate how often a specific event or aspect of care occurred during their hospital stay. Patients are then given response options such as "Never," "Sometimes," "Usually," or "Always" for questions. The individual question that assesses Hospital Environment also gives patients the response options of "Never," "Sometimes," "Usually," or "Always." The composite measures are then derived from aggregating individual question responses, whereby each patient rating is assigned a score. The composite measure reflects the average score across all patients who responded to the specific set of questions.

Adjustments are made to account for the survey delivery method and patient demographics. These composite measures are considered continuous variables of measurement (Belasen et al., 2020).

The HCAHPS survey also includes two global items: likelihood to recommend and overall rating of the hospital. The overall Rating of the Hospital item is measured using a 10-point scale whereby the Likelihood to Recommend is measured on a 4-point scale with possible response options of “Definitely Yes,” “Probably Yes,” “Definitely No,” or “Probably No.”

It is imperative to note that the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey, jointly developed by the Centers for Medicare and Medicaid Services (CMS) and the Agency for Healthcare Research and Quality, serves to evaluate and compare patients' perceptions of care across different healthcare organizations. Scores on the survey are calculated as percentages of top-box responses, reflecting the most positive feedback, and are used by CMS to assess hospitals for financial incentives or penalties (Indovina et al., 2021).
The way patients perceive the quality of the service they receive can influence their inclination to recommend a hospital (Hendsun, 2022). Consequently, organizations strive for patients to return, refer friends and family, and share positive word-of-mouth, showcasing behavioral loyalty toward their healthcare experiences (LaVela & Gallan, 2014). The purpose of hospital ratings is to assist consumers in making well-informed decisions while also aiding policymakers to evaluate the performance and value of the healthcare system (Popovich et al., 2020). The impact of overall rating and likelihood to recommend scores can be seen from an economical standpoint as well. Health systems that have demonstrated better patient experience performance, as measured by the HCAHPS "likelihood to recommend" and overall ratings, have also exhibited higher net margins, lower spending within the first 30 days after discharge, and received greater reimbursement per beneficiary throughout the care episode compared to most health systems with lower patient experience performance (Belasen et al., 2020).

II.2 Patient Experience and COVID

II.2.1 The COVID Pandemic

In December 2019, numerous instances of respiratory illness surfaced in China's Wuhan Province, subsequently determined to be caused by a new strain of coronavirus termed COVID-19. By January 2020, the swift dissemination of the virus worldwide prompted the World Health Organization (WHO) to announce a global health emergency. Globally, the pandemic’s rapid spread triggered a major socioeconomic disruption. Referred to as a "Black Swan event," in reference to the concept popularized by economist N.N. Taleb (2007), such occurrences are characterized by their highly improbable nature, unpredictability, and substantial disruptive impact on various facets of society. According to Devarajan et al. (2023), the prevailing uncertainty and upheaval associated with the COVID-19 pandemic were largely unforeseen by
global leadership, thus characterizing its impact as a black swan event. Numerous nations and organizations were ill-prepared for the profound ramifications of the pandemic, including healthcare facilities and COVID care centers, which experienced substantial disruption because of the crisis. The economic impact of the COVID-19 pandemic was widespread. The COVID-19 pandemic caused lockdowns, restrictions, and business closures, resulting in significant economic downturns, job losses, and financial hardships for individuals, businesses, and entire industries. Supply chains were disrupted, leading to shortages of essential goods and services. In China, the original epicenter of the pandemic, all transportation into and out of the cities was banned and the airports and train stations closed. Throughout the country, similar restrictions were imposed and although these actions controlled the spread of the virus the financial impact seen was a decrease in the country’s GDP of 6.8% in the first quarter of 2020. In the same year, the United States was estimated to see a 15% decrease in its GDP as well (Kaye et al., 2020).

II.2.2 COVID and Healthcare

While the economic impact of the COVID-19 pandemic was astronomical, the pandemic’s primary impact could be seen in the widespread health crisis and loss of life. The virus infected millions of people worldwide, leading to severe illness, hospitalizations, and deaths. Even though the impact of the Novel Coronavirus was felt globally in every industry, the healthcare industry was affected the most (Hendsun, 2022). The healthcare sector encountered immense obstacles in its efforts to manage and address the pandemic, with healthcare facilities worldwide grappling with significant difficulties primarily attributed to a lack of readiness and preparedness. In numerous cases, personal protective equipment (PPE) was scarce for healthcare workers. A study revealed that only 37.4% of healthcare workers in Pakistan had access to N95 respirators, 34.5% to gloves, 13% to face shields or goggles, and 12.9% to full suits/gowns. Even
in the United States, a country often associated with abundant medical supplies, PPE shortages were prevalent. Approximately 15% of doctors reported lacking access to N95 respirators; over 20% faced a shortage of gloves; around 12% had limited availability of face shields; and nearly 50% experienced a shortage of full suits/gowns (Kaye et al., 2021).

The COVID-19 pandemic brought about an unparalleled upheaval in healthcare delivery and receipt, leading to reduced in-person healthcare appointments, delays in diagnosis and treatment commencement, a surge in telehealth usage, and alterations in treatment modalities and monitoring approaches (Bernacki et al., 2021). Due to standardized protocols recommended by the CDC and WHO, hospitals went through many changes to adapt and stay in compliance to promote patient, visitor, and staff safety (Drapeaux et al., 2021). These disruptions and standardizations of protocols all impacted the patients’ experience.

II.2.3 Patient Experience, COVID, and Healthcare

As mentioned, patient experience encompasses all of the interactions, as shaped by an organization’s culture, that influence patient perceptions of care. Much research has shown the many ways in which the COVID-19 pandemic impacted the patient experience. The pandemic gave rise to the increased utilization of telehealth and many of the studies conducted in this domain examined the effects of COVID-19 on patient experience through the lens of means of meeting with patients. As with many other service industries, the COVID-19 pandemic was the impetus healthcare needed to change its business model to prevent the spread of the virus, all while protecting its patients and employees and providing care to its patients. The pandemic accelerated the integration of telehealth via digital transformation: a core transformative process facilitated by creative utilization of digital tools and strategic deployment of critical resources and competencies, with the goal of substantially enhancing an organization and redefining its
value proposition for stakeholders (Baudier et al., 2022). A thorough literature review of COVID-19's impact on patient experience by Hawrysz et al. (2021) revealed that the patient experience in telehealth or telehealth experience feedback provided by patients who used telehealth during the pandemic showed positive patient satisfaction. For the scope of this research, however, we did not focus on the pandemic’s impact on patient experience and telehealth; instead, our research was aimed at assessing the patient’s experience when care was provided in person by the healthcare provider. Face-to-face or in-person care is provided in both inpatient and outpatient settings. Inpatient care refers to medical services provided to individuals who require admission to a hospital or healthcare facility for an extended period, while inpatients are typically those who need intensive monitoring, medical treatment, or surgical procedures that necessitate staying overnight or for an extended duration. The determination of whether to admit a patient to the hospital as an inpatient is a multifaceted medical decision that relies on the patient’s doctor’s assessment of their medical requirements and the necessity of hospital-based care. Typically, an inpatient admission is deemed suitable when the patient is expected to require hospital care for at least two or more consecutive nights due to medical necessity. However, the doctor needs to authorize such admission, and the hospital must officially admit the patient to be classified as an inpatient (Center for Medicare and Medicaid Services, n.d.). In contrast, outpatient care refers to medical services provided to individuals who do not require overnight hospitalization and can receive treatment or services without being admitted. Outpatient care is usually provided in clinics, medical offices, or specialized treatment centers. If the patient receives emergency department services, observation services, outpatient surgery, lab tests, X-rays, or any other hospital services without a doctor's admission order to be admitted as an inpatient, this is considered outpatient. Even if the patient spends the night in the hospital under
these circumstances, they are still classified as an outpatient (Center for Medicare and Medicaid Services, n.d.). While both settings provide face-to-face care, the patient’s experience is assessed differently for each. For this research, we focused our search of the literature on patients' experiences from the inpatient setting with particular emphasis on the COVID-19 pandemic’s impact.

II.2.4 Patient Experience, COVID and In-patient

Within the hospitals, research on the COVID pandemic revealed challenges experienced by other healthcare providers that impacted the patients’ experience.

Visitation. The impact of visitation policies on the quality of patient care primarily relies on the presence of visitors and how it affects both clinical staff and patients themselves. Patients and their visitors, often family members, have long regarded open visitation as being a positive aspect of the patient experience. This viewpoint is not surprising, as open visitation is a key component of a patient-centered approach. The main benefits of visitations for patients include receiving support during their recovery and the opportunity to address any anxieties they may have about their healthcare needs. Additionally, studies have indicated that the decision to restrict visitations had negative consequences for both the overall patient experience and patient safety outcomes. Specifically, it had a significant adverse impact on ratings related to the staff’s responsiveness in addressing patient needs and on the occurrence of sepsis and patient falls, which are crucial indicators of patient safety (Silvera et al., 2021).

Communication. Provider communication plays a vital role in patients’ experience. Effective provider communication conveys empathy; listening to the patient, offering simple explanations, showing respect for the patient, and providing emotional support builds trust, improves patient understanding, enhances adherence to treatment plans, achieves better health
outcomes, and ensures patient satisfaction (Sanders et al., 2021). While provider communication has always been a known driver of patient experience, research done to highlight COVID’s impact on provider communication showed inconsistent patient-provider communication, with poor quality physician communication compared to that of nurses (Drapeaux et al., 2021). The mandatory use of PPEs such as masks by patient-facing staff was mentioned as impacting patients’ experience. Key et al. (2021) investigated whether the use of PPE during direct patient care created a physical barrier to human interaction, as it conceals facial expressions and partially hampers communication, causing patients to have anxiety because they may not fully comprehend the reasons behind its regular usage. However, that was found to not impact the patient experience; patients believed the staff needed to wear PPEs as protection for themselves and the patients, with most revealing little anxiety about the practice. There are however conflicting results in research in terms of mask usage and patient perception. Drapeaux et al. (2021) noted that patients reported mask donning negatively affected communication. The primary communication obstacle encountered during the COVID-19 pandemic involved patients and their families being unable to identify their healthcare providers’ faces and voices, attributed to the wearing of masks and other PPE (Wittenberg et al., 2021).

**COVID vs non-COVID Patients.** Patients diagnosed with the COVID-19 virus had markedly different experiences than did those who tested negative for COVID, highlighting the contrasting nature of their respective situations. Non-COVID-positive patients reported diverse experiences related to healthcare provider communication, patient-provider education, patient satisfaction affected by pandemic-related mental health stress, overall isolation from family, fluctuating hospital services, and consistent professionalism among healthcare providers. Patients who tested positive for COVID-19 expressed gratitude while highlighting inconsistent
communication, varying patient education, concerns about the quality of patient care, and timeliness/responsiveness of services (Drapeaux et al., 2021).

**Staff Burnout.** Healthcare provider burnout has always been a concern in healthcare, among both physicians and nurses. Amidst the pandemic, increased nurse workload and burnout resulted in patients expressing that their emotional and psychological needs went unaddressed (Drapeaux et al., 2021).

**Framing.** The widely used metric for assessing service quality is SERVQUAL, a tool created by Parasuraman et al. (1985, 1988) that was designed to measure service quality as perceived by the customer (Asubonteng et al., 1996). While much research has been done to assess the level of patient experience and quality in the delivery of healthcare services, few studies have been conducted to assess how the SERVQUAL model is used to assess the impact of patient experience moderated by the COVID-19 pandemic. However, research done in that space reported that, during the COVID pandemic, the dimensions of reliability, responsiveness, assurance, and empathy of the SERVQUAL model all affected quality of care while tangibility was shown to have the least impact in the inpatient setting (Al Atar & Hamid, 2022). In the outpatient setting, responsiveness was reported to be the highest predictor of patient satisfaction, while empathy had the lowest predictability (Seap et al., 2022).

Despite prior research on this topic, further investigation is necessary to develop a comprehensive understanding of the impact of the COVID-19 pandemic on patients' experiences. While previous studies (e.g., Al Atar & Hamid, 2022; Drapeaux et al., 2021; Key et al., 2021; Seap et al., 2022; Silvera et al., 2021) have examined the effects of COVID-19 on patient experiences, none have included a comparative analysis between pre-pandemic and pandemic experiences or explored the differences in patients' experiences when diagnosed with COVID-19.
versus other conditions. Moreover, little attention has been given to how the pandemic
influenced patients' ratings of the hospitals and their inclination to recommend these institutions
to friends and family. Therefore, there is a knowledge gap that needs to be addressed through
further research. Furthermore, there is a call for more research to investigate the impact of the
COVID-19 pandemic on patients' perception of healthcare quality and their likelihood to
recommend hospitals (Belasen, 2020). We will scope our research to add to the body of
knowledge by answering the research questions:

What was the effect of the COVID-19 pandemic on changing patient experience and the rating of
the hospital?

What was the effect of the COVID-19 pandemic on changing patient experience and the
likelihood to recommend the hospital to friends and family?
III CONCEPTUAL FRAMEWORK AND HYPOTHESES

The SERVQUAL model is frequently used to assess the level of patient satisfaction and service (Al Atar et al., 2023). By utilizing data gathered from focus group interviews, Parasuraman et al. (1985) identified fundamental elements that mirrored service attributes considered by consumers when evaluating the quality of service provided by businesses in the service industry. Within the focus groups, consumers discussed service quality based on how well the service performed on each dimension, comparing it to their perceived level of performance that should be provided. In essence, a superior service would exhibit a level of performance that aligned with the consumer's expectations. This expected level of performance was referred to as consumer expectations, and if the actual performance fell below these expectations, consumers deemed the quality to be subpar. While previous studies have presented differing viewpoints regarding the relationship between satisfaction and quality, with some suggesting that satisfaction leads to quality and others proposing the opposite (Asubonteng et al., 1996), for this study, it was posited that satisfaction is the precursor to quality.

SERVQUAL was developed and used predominantly in the management research field (Wang et al., 2015) and utilized a robust scale for measuring across service sectors (Asubonteng et al., 1996; Butt & de Run, 2010). In healthcare, SERVQUAL has been used to examine dental school patient clinics, acute care hospitals, dental offices, and physicians (Asubonteng et al., 1996). Specific to the healthcare field, SERVQUAL has been used to assess the patients’ satisfaction with the goal of determining quality of care (Umoke et al., 2020; Zarei, 2012).

The SERVQUAL multi-item scale was developed to assess customer perceptions of service quality and categorizes them into dimensions:

- Reliability - ability to perform service dependably and accurately
- Assurance - the ability of staff to inspire confidence and trust
• Tangibility - physical facilities, equipment, staff appearance, etc.
• Empathy - the extent to which caring individualized service is given
• Responsiveness - willingness to help and respond to customer need

This research leveraged the SERVQUAL theory as a guide by selecting HCAHPS indicators that aligned to a SERVQUAL dimension, based on its definition.

Table 2 HCAHPS Indicators Aligned with SERVQUAL Dimensions

<table>
<thead>
<tr>
<th>SERVQUAL Dimension</th>
<th>Patient Experience-HCAHPS Domains with Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empathy</td>
<td>Doctors Communication</td>
</tr>
<tr>
<td></td>
<td>Nurse Communication</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>Staff Responsiveness</td>
</tr>
<tr>
<td>Tangibility</td>
<td>Cleanliness</td>
</tr>
</tbody>
</table>

Development through application in the healthcare sciences services field will add to the SERVQUAL theory. See the appendix for a list of selected survey questions associated with each of the HCAHPS items.

III.1 Hypotheses and Research Model

The current research examined the effect of the COVID-19 pandemic on patient experience, recommendations to friends, and the rating of hospital by focusing on the research questions.

Figure 1 Research Model
H1a: Doctor Empathy will have a positive and significant relationship with the rating of the hospital, pre-COVID and during COVID.

H1b: Doctor Empathy will have a positive and significant relationship with the likelihood of a positive recommendation to friends and family, pre-COVID and during COVID.

H2a: Nurse Relation will have a positive and significant relationship with the rating of the hospital, pre-COVID and during COVID.

H2b: Nurse Relation will have a positive and significant relationship with the likelihood of a positive recommendation to friends and family, pre-COVID and during COVID.

H3a: Responsiveness of Staff will have a positive and significant relationship with the rating of the hospital, pre-COVID and during COVID.

H3b: Responsiveness of Staff will have a positive and significant relationship with the likelihood of a positive recommendation to friends and family, pre-COVID and during COVID.
IV METHODOLOGY

IV.1 Research Design

This research used the variance model to connect service quality of the patients’ experience with numerical data (Van de Ven, 2013). The variance model aims to statistically clarify the variations in the likelihood to recommend (dependent variable) by analyzing the impact of input factors related to patient experience (independent variables) on the desired outcomes (Van de Ven 2013). An Exploratory Factor Analysis (EFA) was conducted using SPSS26; EFA is best used when the connections between latent variables are ambiguous or unknown by seeking to ascertain the nature and strength of the relationships between the variables and their underlying factors (Byrne, 2016). Next, a Structural Equation Model (SEM) was conducted. SEM is used for this study due to its approach to data analysis as it allows for hypothesis testing by specifying inter-variable relations, providing explicit estimates of measurement error, and accommodating both observed and unobserved variables, thereby offering unique capabilities for modeling multivariate relations and estimating indirect effects (Byrne, 2016). Specifically, I conducted a PLS-SEM path analysis that examined the model linking all constructs (NursRel, DocEmp and, Resp), the Overall Rating of the Hospital, and the likelihood to recommend using SmartPLS 4. PLS-SEM was best for this study as it is an approach that prioritizes prediction when estimating statistical models, resolving the perceived conflict between emphasizing explanation, common in academic research, and prediction, which is crucial for practical decision making (Hair et al., 2019).

IV.2 Data Collection, Instrument, and Variables

The HCAHPS survey allowed the determination of which indicators of patient experience were impacted by the COVID-19 pandemic. The patient experience data used in this study
represented the patient population of 2 hospitals in Atlanta, GA, totaling over 700 beds. Both hospitals offer a wide range of medical services, including cardiology, cardiothoracic surgery, oncology, neuroscience, general and vascular surgery, internal medicine, urology, obstetrics, neonatal intensive care, and gynecology. They also provide top-quality services such as joint replacement, surgical weight loss, mammography, cancer treatment, heartburn solutions, a wellness center certified by the Medical Fitness Association, and various other services. Data for the study were extracted from Press Ganey, a third-party company used by the hospital to distribute HCAHPS surveys and analyze results. Data spanning 12 months were extracted for all inpatients before the first case of COVID in the state of Georgia on March 2, 2020 (Norder, 2020) and 24 months thereafter, including the peak infection rate of the pandemic. The data used in this study are in the public domain and do not include patient-level identifiers. To guarantee that variations in HCAHPS outcomes solely reflect variances in hospital quality, adjustments are made for patient demographics and survey administration method. Only the adjusted outcomes are disclosed to the public and regarded as official. Patient race and ethnicity are not factored into the adjustment of HCAHPS results; these data points are included in the survey to fulfill requirements mandated by Congress, (HCAHPS-CAHPS hospital survey, n.d.)

IV.3 Independent Variables

This research centered on exploring PX, delineated by three independently constructed variables: Doctor Empathy, Nurse Relation, and Responsiveness, each comprising a cumulative total of eight indicators. The assessment instrument employed for this study was derived from the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey, designed in a Likert-scale format with four response options: "Never," "Sometimes," "Usually," or "Always." Only the top box percentage or the percentage of patients that reported “Always”
was used in this study. The questions utilized in this survey instrument from the HCAPHS survey are provided in the appendix for reference.

**IV.4 Dependent Variables**

The dependent variables in this study were “likelihood to recommend” and “rating of the hospital” and were both taken from the HCAHPS survey. The likelihood to recommend was gauged using a Likert-scale format, offering respondents four response options: "Definitely Yes," "Probably Yes," "Definitely No," and "Probably No.” The rating of the hospital was evaluated on a 10-point Likert scale with four response options: "Never," "Sometimes," "Usually," or "Always." Only the top box percentage or the percentage of patients that reported 9’s and 10’s, known as the net promoter score (NPS), were used. The questions utilized in this survey instrument from the HCAPHS survey are provided in the appendix for reference.
V RESULTS AND ANALYSIS

This chapter begins with an examination of all data pertinent to the pre-COVID period spanning 12 months, followed by the analysis of the COVID period extending for 24 months. The initial analysis for each period prioritized contextualization through the application of descriptive statistics to ensure transparency, provided a basis for interpretation, facilitated comparative analysis, and offered support for the study’s methodological choice. Additionally, a comprehensive explanation of the findings derived from the data analysis is provided. Using PLS-SEM, the analysis encompassed scrutiny of both the measurement and structural models. The measurement model served to establish the reliability and validity of the constructs, while the structural model assessed the significance of the hypothesized relationships. The following hypotheses were formulated to evaluate the impact of predictors on the outcome:

**H1a:** *Doctor Empathy* will have a positive and significant relationship with the rating of the hospital, both pre-COVID and during COVID.

**H1b:** *Doctor Empathy* will have a positive and significant relationship with the likelihood of a positive recommendation to friends and family, both pre-COVID and during COVID.

**H2a:** *Nurse Relation* will have a positive and significant relationship with the rating of the hospital, both pre-COVID and during COVID.

**H2b:** *Nurse Relation* will have a positive and significant relationship with the likelihood of a positive recommendation to friends and family, both pre-COVID and during COVID.

**H3a:** *Responsiveness of Staff* will have a positive and significant relationship with the rating of the hospital, both pre-COVID and during COVID.

**H3b:** *Responsiveness of Staff* will have a positive and significant relationship with the likelihood of a positive recommendation to friends and family, both pre-COVID and during COVID.
V.1 Pre-COVID Descriptive Statistics

The raw data were imported into SPSS and a descriptive analysis was performed. Through descriptive analysis, it was found that eleven data points were missing from the Response to Toileting (RespT) and one from the Response to Call Bell (RespCB). Based on the indicators, the descriptive Patient Experience (PX) statistics (Table 3) reveal an overall mean score of 74.69 (SD = 11.52). This shows that 74.69% of patients gave a top box score for their experience. DocTr had the highest mean value, indicating that patients perceived that the doctors treated them with courtesy and respect.

Table 3 Descriptive Statistics for Patient Experience Construct-Pre-Covid

<table>
<thead>
<tr>
<th>Item</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>DocEx</td>
<td>364</td>
<td>.00</td>
<td>100.00</td>
<td>81.7487</td>
<td>15.56891</td>
</tr>
<tr>
<td>DocLis</td>
<td>364</td>
<td>.00</td>
<td>100.00</td>
<td>82.6289</td>
<td>15.38930</td>
</tr>
<tr>
<td>DocTr</td>
<td>364</td>
<td>.00</td>
<td>100.00</td>
<td>88.1204</td>
<td>13.28234</td>
</tr>
<tr>
<td>NursEx</td>
<td>364</td>
<td>.00</td>
<td>100.00</td>
<td>76.1862</td>
<td>16.55482</td>
</tr>
<tr>
<td>NursLis</td>
<td>364</td>
<td>.00</td>
<td>100.00</td>
<td>75.2298</td>
<td>16.86542</td>
</tr>
<tr>
<td>NursT</td>
<td>364</td>
<td>.00</td>
<td>100.00</td>
<td>82.9103</td>
<td>14.81726</td>
</tr>
<tr>
<td>RespT</td>
<td>353</td>
<td>.00</td>
<td>100.00</td>
<td>66.5477</td>
<td>28.34230</td>
</tr>
<tr>
<td>RespCB</td>
<td>363</td>
<td>.00</td>
<td>100.00</td>
<td>63.1295</td>
<td>19.86584</td>
</tr>
<tr>
<td>HospCl</td>
<td>364</td>
<td>.00</td>
<td>100.00</td>
<td>65.2534</td>
<td>18.10482</td>
</tr>
<tr>
<td>HospQ</td>
<td>364</td>
<td>.00</td>
<td>100.00</td>
<td>64.8696</td>
<td>17.27812</td>
</tr>
<tr>
<td>PX</td>
<td>364</td>
<td>.00</td>
<td>100.00</td>
<td>74.6922</td>
<td>11.52245</td>
</tr>
</tbody>
</table>

V.1.1 Measurement Model

An examination of the measurement model was completed by evaluating the quality of constructs. This assessment began with scrutinizing the factor loadings, followed by establishing construct reliability and validity. The measurement model delineates the relationship between the indicators and the latent constructs and is assessed through a reflective or formative construct model. SERVQUAL theory, a multidimensional theory and guide for this study, utilizes a reflective model to analyze its Lower-Order Constructs (LOC). Based on the guidance of the
SERVQUAL theory, this research utilized the reflective model. In reflective models, variations in the latent construct typically occur before variations in the indicator variables are used to measure it. This indicates that while the indicator variables should be related to the latent construct, they can also be somewhat interchangeable, meaning that the specific questions asked, if they maintain internal validity, do not affect the underlying latent constructs being measured (Rose et al., 2023).

**Factor Loading.** An Exploratory Factor Analysis (EFA) was done to evaluate the loadings of each variable using principal component analysis and varimax rotation. EFA, a method utilized in multivariate statistics, entails exploring different hypothetical constructs (e.g., factors, dimensions, latent variables) to succinctly describe the patterns of covariation among variables (Farradinna et al., 2023). Missing data were accounted for through the exclude cases listwise option. The communality of the scale, which indicates the amount of variance in each dimension, was also assessed to ensure acceptable levels of explanation.

Before conducting the EFA analysis, the suitability of the data was assessed based on the assumptions of factor analysis. The first step involved determining the adequacy of the sample size using the Kaiser-Meyer-Olkin (KMO) test (Kaiser, 1974), with a recommended value greater than 0.7. Additionally, Bartlett’s (1954) Test of Sphericity was utilized to verify that correlations between items were sufficiently large for EFA, with significance set at p < 0.05. During the EFA, certain criteria must be met for a satisfactory model fit: (1) absence of cross-loadings, where items exhibit high factor loadings on multiple factors; (2) each factor should contain a minimum of three items; and (3) factor loadings should exceed 0.40 to be considered substantial. Items failing to meet these criteria are removed, and the EFA process is repeated iteratively until a satisfactory model fit is achieved (Farradinna et al., 2023). The Bartlett’s Test
of Sphericity yielded significant results, $\chi^2 (n=364) = 1104.29$ ($p < 0.001$), confirming its suitability for factor analysis. The Kaiser-Meyer-Olkin measure of sampling adequacy (MSA), assessing the data's suitability for factor analysis, was 0.821, surpassing the acceptable threshold of 0.800. Subsequently, the factor analysis revealed three factors for the scale, accounting for 65.52% of the data's variance.

The initial EFA results showed that indicators DocLis and DocEx ("DocLis": Doctors listen carefully to you, and "DocEx": Doctors explain in a way I can understand”) showed high collinearity while communalities for HospCl and HospQ ("Hospital cleanliness” and “Hospital quietness”) were below 0.50. Consequentially, both DocLis and DocEx variables were combined and averaged to create a newly constructed variable; Doctor Listen and Explain (DocEng). To exclude the variables below a 0.50 communality, the EFA was repeated and HospQ was removed. This new analysis gave three factors for the scale and the Kaiser-Meyer-Olkin MSA was 0.811. The three factors explain 71.318 percent of the variance among the items in the study. Bartlett’s Test of sphericity proved to be significant, and all communalities were over the required value of 0.50 except for HospCl which loaded a .370. While HospCl loaded below 0.50, it did not affect the overall factoring and loaded on its own at .55, as demonstrated in the rotated component matrix, while HospQ showed a lower loading at 0.50. The three factors identified in this EFA aligned with two of this research's theoretical guidance propositions of SERVQUAL. Factor 2, which includes DocEng and DocTr, refers to Empathy. Titled Doctor Empathy (DocEmp) for this research and Factor 3, which includes RepCB and ResT (Responsiveness to Call Bell and Response to Toileting) which aligns with Responsiveness and will be titled Responsiveness of Staff (Resp). However, Factor 1 includes items NursLis, NursEx, NursTr, and HospCl (“Nurse listens carefully,” “Nurse explains,” “Nurse treats with courtesy and respect,”
and “Hospital cleanliness”), titled Nurse Relation (NursRel). The factor loadings are shown in Table 4.

**Table 4 Pre-COVID Factor Loadings**

<table>
<thead>
<tr>
<th>Items</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse Relation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NursLis</td>
<td>.844</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NursT</td>
<td>.840</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NursEx</td>
<td>.807</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HospCl</td>
<td>.553</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctor Empathy</td>
<td></td>
<td>.915</td>
<td></td>
</tr>
<tr>
<td>DocTr</td>
<td></td>
<td></td>
<td>.858</td>
</tr>
<tr>
<td>DocEng</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsiveness</td>
<td></td>
<td></td>
<td>.886</td>
</tr>
<tr>
<td>RespT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RespCB</td>
<td></td>
<td></td>
<td>.635</td>
</tr>
</tbody>
</table>

**Notes:** DocEmp; Doctor Empathy, NursRel; Nurse Relation; RespS; Responsiveness of Staff

**Reliability Analysis.** The subsequent stages involved evaluating the model's reliability, the first being the internal consistency reliability. Reliability refers to the degree of stability and consistency exhibited by a measuring instrument. At its core, reliability pertains to the instrument's ability to produce consistent results upon repeated use. Composite Reliability (CR) and Cronbach’s alpha (α) are prominent in assessing model reliability. Elevated values generally signify increased levels of reliability, with acceptable values between 0.70 and 0.90. For exploratory research, such as this, values between 0.60 and 0.70 are acceptable (Hair et al., 2019). The results of CR confirmed consistency for all constructs while α confirmed only two of the three constructs, namely DocEmp and NursRel, as seen in Table 5. However, Cronbach’s alpha, being a less precise measure of reliability, does not take into account item weights. Conversely, composite reliability, which considers the individual loadings of construct
indicators, tends to yield higher reliability estimates compared to Cronbach’s alpha. While Cronbach’s alpha may underestimate reliability and composite reliability may overestimate it, the true reliability of the construct is generally considered to fall between these two extremes (Hair et al., 2019). As a result, the model’s reliability was confirmed to be consistent.

**Table 5 Construct Reliability Analysis (Cronbach Alpha and Composite Reliability)**

<table>
<thead>
<tr>
<th>Construct</th>
<th>(α)</th>
<th>(CR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DocEmp</td>
<td>0.830</td>
<td>0.921</td>
</tr>
<tr>
<td>NursRel</td>
<td>0.823</td>
<td>0.885</td>
</tr>
<tr>
<td>RespS</td>
<td>0.491</td>
<td>0.775</td>
</tr>
</tbody>
</table>

*Notes: DocEmp: Doctor Empathy, NursRel: Nurse Relation, RespS: Responsiveness of Staff*

**Construct Validity Analysis.** The next assessment of the reflective model addressed convergent validity and discriminant validity. Convergent validity refers to how well the construct consolidates to account for the variation in its items. The primary metric used to assess convergent validity is the average variance extracted (AVE) for all items within each construct. A satisfactory AVE is typically considered to be 0.50 or greater, indicating that the construct accounts for at least 50 percent of the variance in its items, and convergent validity is established. This study’s results indicated that all constructs had an AVE above 0.50, which means there is convergent validity (Hair et al., 2019). The AVE values for each construct are shown in Table 6.

**Table 6 Construct Convergent Validity (AVE)**

<table>
<thead>
<tr>
<th>Construct</th>
<th>Average variance extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DocEmp</td>
<td>0.854</td>
</tr>
<tr>
<td>NursRel</td>
<td>0.662</td>
</tr>
<tr>
<td>RespS</td>
<td>0.641</td>
</tr>
</tbody>
</table>

*Notes: DocEmp: Doctor Empathy, NursRel: Nurse Relation, RespS: Responsiveness of Staff*

The discriminant validity assesses the extent to which a construct is empirically distinct from other constructs. Fornell and Larcker (1981) introduced the conventional metric,
recommending that the Average Variance Extracted (AVE) of each construct be contrasted with the squared inter-construct correlation to gauge shared variance within that construct and all other reflectively measured constructs in the structural model. They stipulated that the shared variance for all constructs in the model should not exceed their respective AVEs (as cited in Hair et al., 2019). The analysis conducted in this study confirmed the establishment of discriminant validity, as illustrated in Table 7, where the square root of AVE is denoted in bold and italics.

**Table 7 Fornell & Larcker Criterion**

<table>
<thead>
<tr>
<th></th>
<th>DocEmp</th>
<th>NursRel</th>
<th>RespS</th>
<th>RTH</th>
<th>LTR</th>
</tr>
</thead>
<tbody>
<tr>
<td>DocEmp</td>
<td>0.924</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NursRel</td>
<td>0.516</td>
<td>0.814</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RespS</td>
<td>0.356</td>
<td>0.508</td>
<td>0.801</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTH</td>
<td>0.107</td>
<td>0.023</td>
<td>0.060</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>LTR</td>
<td>0.473</td>
<td>0.609</td>
<td>0.479</td>
<td>0.035</td>
<td>1</td>
</tr>
</tbody>
</table>

*Notes: DocEmp; Doctor Empathy, NursRel; Nurse Relation; RespS; Responsiveness of Staff*

Recent studies, however, have suggested that the Fornell & Lacker Criterion may not be ideal for evaluating discriminant validity. According to Hair et al. (2019), Henseler et al. (2015) demonstrated limitations of the Fornell-Larcker criterion, especially when indicator loadings on a construct are only slightly different (e.g., ranging from 0.65 to 0.85). An alternative method, the heterotrait-monotrait (HTMT) ratio of correlations, was suggested by Voorhees et al. (2016). This ratio compares the average correlations among items across different constructs to the geometric mean of the average correlations among items measuring the same construct. In structural models, the range of validity should not exceed 0.85 for constructs with distinct concepts and 0.90 for constructs with closely related concepts (Hair et al., 2019). Table 8 presents the study's findings, indicating that the HTMT ratio for each construct falls below the recommended thresholds, thus confirming discriminant validity.
### Table 8 Heterotrait-monotrait Ratio (HTMT)

<table>
<thead>
<tr>
<th></th>
<th>DocEmp</th>
<th>NursRel</th>
<th>RespS</th>
<th>RTH</th>
<th>LTR</th>
</tr>
</thead>
<tbody>
<tr>
<td>DocEmp</td>
<td>0.617</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NursRel</td>
<td>0.524</td>
<td>0.758</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RespS</td>
<td>0.115</td>
<td>0.026</td>
<td>0.094</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTH</td>
<td>0.516</td>
<td>0.671</td>
<td>0.619</td>
<td>0.035</td>
<td></td>
</tr>
<tr>
<td>LTR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Notes:* DocEmp; Doctor Empathy, NursRel; Nurse Relation; RespS; Responsiveness of Staff

### V.1.2 Structural Model

Once all evaluations of the measurement model were deemed satisfactory, the subsequent steps involved assessing the PLS-SEM results by examining the structural model. The initial step required an examination of the structural model regressions to detect any potential issues with multicollinearity. Multicollinearity was assessed using the variance inflation factor (VIF). According toHair et al. (2019), VIF values exceeding 5 suggest a likelihood of multicollinearity among the predictor constructs. However, Becker et al. (2015) indicated that multicollinearity could also arise when VIF values fall within the range of 3 to 5. Thus, VIF values below 3 are considered optimal. Notably, all VIF values assessed and observed in this study were below 3.

The structural model was then assessed by analyzing the path coefficients to determine the relationships between the constructs and determining the statistical significance of the model. The examination of coefficients and p-values, whereby the path coefficients and their statistical significance within the structural model are examined, served to substantiate the research hypotheses.
V.2 Pre-COVID Hypotheses

H1a evaluated whether Doctor Empathy significantly and positively impacted the rating of the hospital pre-COVID. The results revealed that Doctor Empathy had a significant and positive impact on the rating of the hospital, pre-COVID ($\beta = 0.124$, $t = 1.995$, $p < 0.05$). Hence, H1a was supported. The results are presented in Table 9.

H1b asked whether Doctor Empathy significantly and positively impacted the likelihood of a positive recommendation of the hospital to friends and families, pre-COVID. The results revealed that Doctor Empathy had a significant and positive impact on the likelihood of a positive recommendation ($\beta = 0.190$, $t = 2.777$, $p < 0.05$). Hence, H1b was supported. The results are presented in Table 9.

H2a evaluated whether Nurse Relation significantly and positively impacted the rating of the hospital pre-COVID. The results revealed that Nurse Relation had an insignificant impact on the rating of hospital ($\beta = -0.666$, $t = 0.960$, $p = 0.337$). Hence, H2a was not supported. The results are presented in Table 9.

H2b evaluated whether Nurse Relation significantly and positively impacted the likelihood of a positive recommendation the hospital to friends and families, pre-COVID. The results revealed that Nurse Relation had a significant and positive impact on the likelihood of a positive recommendation ($\beta = 0.407$, $t = 6.343$, $p < 0.001$), supporting H2b. The results are presented in Table 9.

H3a evaluated whether the Responsiveness of Staff significantly and positively impacted the rating of the hospital. The results revealed that Responsiveness of Staff had an insignificant impact on that rating ($\beta = 0.049$, $t = 0.725$, $p = 0.468$); hence, H3a was unsupported. The results are presented in Table 9.
H3b evaluated whether the Responsiveness of Staff significantly and positively affected the likelihood of a positive recommendation of the hospital to friends and families, pre-COVID. The results revealed that the Responsiveness of Staff had a significant and positive impact on that recommendation ($\beta = 0.204$, $t = 4.039$, $p < 0.001$). This supports H3b. The results are presented in Table 9.

As mentioned, the results are presented in Table 9. The structural model, as generated by SmartPLS4, is presented in Figure 2.

Table 9 Statistics as Related to Hypotheses

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Beta Coefficient</th>
<th>Standard deviation</th>
<th>T statistics</th>
<th>P values</th>
</tr>
</thead>
<tbody>
<tr>
<td>DocEm -&gt; RTH</td>
<td>0.124</td>
<td>0.062</td>
<td>1.995</td>
<td>0.046</td>
</tr>
<tr>
<td>DocEmp -&gt; LTR</td>
<td>0.190</td>
<td>0.068</td>
<td>2.777</td>
<td>0.006</td>
</tr>
<tr>
<td>NursRel -&gt; RTH</td>
<td>-0.066</td>
<td>0.069</td>
<td>0.960</td>
<td>0.337</td>
</tr>
<tr>
<td>NursRel -&gt; LTR</td>
<td>0.407</td>
<td>0.064</td>
<td>6.343</td>
<td>****</td>
</tr>
<tr>
<td>RespS -&gt; RTH</td>
<td>0.049</td>
<td>0.068</td>
<td>0.725</td>
<td>0.468</td>
</tr>
<tr>
<td>RespS -&gt; LTR</td>
<td>0.204</td>
<td>0.051</td>
<td>4.039</td>
<td>****</td>
</tr>
</tbody>
</table>

Notes: $\beta =$ Beta Coefficient, SE= Standard Error, $T= t$-Statistics, $P = $ Probability (P) value, *Relationships are significant at $P < 0.001$, DocEmp: Doc Empathy, NursRel: Nurse Relation, RespS: Responsiveness of Staff
V.3 COVID Descriptive Statistics

As with pre-COVID data, data from the period during COVID were imported into SPSS and a descriptive analysis was performed. Through descriptive analysis, I found 14 data points missing from the Response to Toileting (RespT). Missing data were accounted for by the excluding cases listwise option. The descriptive Patient Experience (PX) statistics based on the indicators revealed an overall mean score of 72.12 (SD = 9.72). This showed that 72.12 percent of patients gave the top box score to rate their PX during COVID. DocTr had the highest mean value, indicating that patients perceived doctors treated them with courtesy and respect.
Table 10 Descriptive Statistics for Patient Experience Construct COVID

<table>
<thead>
<tr>
<th>Item</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>DocEx</td>
<td>728</td>
<td>25.00</td>
<td>100.00</td>
<td>80.8017</td>
<td>13.17267</td>
</tr>
<tr>
<td>DocLis</td>
<td>728</td>
<td>40.00</td>
<td>100.00</td>
<td>81.7088</td>
<td>13.04550</td>
</tr>
<tr>
<td>DocTr</td>
<td>728</td>
<td>40.00</td>
<td>100.00</td>
<td>86.5793</td>
<td>11.59347</td>
</tr>
<tr>
<td>NursEx</td>
<td>728</td>
<td>16.67</td>
<td>100.00</td>
<td>73.9584</td>
<td>14.42200</td>
</tr>
<tr>
<td>NursLis</td>
<td>728</td>
<td>.00</td>
<td>100.00</td>
<td>73.1637</td>
<td>14.46956</td>
</tr>
<tr>
<td>NursT</td>
<td>728</td>
<td>.00</td>
<td>100.00</td>
<td>80.5678</td>
<td>13.45223</td>
</tr>
<tr>
<td>RespT</td>
<td>714</td>
<td>.00</td>
<td>100.00</td>
<td>61.7262</td>
<td>25.69225</td>
</tr>
<tr>
<td>RespCB</td>
<td>728</td>
<td>.00</td>
<td>100.00</td>
<td>58.5064</td>
<td>18.77504</td>
</tr>
<tr>
<td>HospCl</td>
<td>728</td>
<td>.00</td>
<td>100.00</td>
<td>61.3548</td>
<td>16.54772</td>
</tr>
<tr>
<td>HospQ</td>
<td>728</td>
<td>.00</td>
<td>100.00</td>
<td>62.5984</td>
<td>16.62399</td>
</tr>
<tr>
<td>PX</td>
<td>714</td>
<td>40.67</td>
<td>95.83</td>
<td>72.1172</td>
<td>9.72482</td>
</tr>
</tbody>
</table>

V.3.1 Measurement Model

A comparative analysis between the pre-COVID and during COVID periods was performed utilizing the same indicators as those used to form constructs of Doctor Empathy (DocEmp), Nurse Relation (NursRel), and Responsiveness of Staff (RespS).

Reliability Analysis. Composite Reliability (CR) and Cronbach’s alpha (α) are prominent in assessing model reliability, with elevated values generally signifying increased levels of reliability and acceptable values between 0.70 and 0.90. For exploratory research, such as this, values between 0.60 and 0.70 are acceptable (Hair et al., 2019). The results of CR confirmed consistency for all constructs while α only supported two of the three constructs, namely DocEmp and NursRel, as seen in Table 11. Cronbach’s alpha may underestimate reliability and composite reliability may overestimate it; thus, the true reliability of the construct is generally considered to fall between these two extremes (Hair et al., 2019). As a result, the model’s reliability is confirmed to be consistent.
Table 11 **Construct Reliability Analysis (Cronbach Alpha and Composite Reliability)**

<table>
<thead>
<tr>
<th></th>
<th>(α)</th>
<th>(CR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DocEmp</td>
<td>0.841</td>
<td>0.926</td>
</tr>
<tr>
<td>NursRel</td>
<td>0.789</td>
<td>0.865</td>
</tr>
<tr>
<td>RespS</td>
<td>0.461</td>
<td>0.779</td>
</tr>
</tbody>
</table>

*Notes: DocEmp; Doctor Empathy, NursRel; Nurse Relation, RespS; Responsiveness of Staff*

**Construct Validity Analysis.** The primary metric used to assess convergent validity is the average variance extracted (AVE) for all items within each construct. A satisfactory AVE is typically considered to be 0.50 or greater, indicating that the construct accounts for at least 50 percent of the variance in its items, thus establishing convergent validity. Based on this study’s results, all constructs for the COVID period had an AVE above 0.50, which means there is convergent validity. The AVE values for each construct are shown in Table 12.

Table 12 **Construct Convergent Validity (AVE)**

<table>
<thead>
<tr>
<th></th>
<th>Average variance extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DocEmp</td>
<td>0.863</td>
</tr>
<tr>
<td>NursRel</td>
<td>0.620</td>
</tr>
<tr>
<td>RespS</td>
<td>0.642</td>
</tr>
</tbody>
</table>

*Notes: DocEmp: Doctor Empathy, NursRel; Nurse Relation, RespS; Responsiveness of Staff*

The Fornell & Larcker Criterion is employed to evaluate discriminant validity, which examines how distinct a construct is from others empirically. According to Hair et al. (2019), the shared variance among all constructs in the model should not exceed their respective Average Variance Extracted (AVE) values. Analysis of the COVID period data indicates that discriminant validity has been confirmed, as demonstrated in Table 13, where the square root of AVE is highlighted in bold and italics.
Table 13 *Fornell & Larcker Criterion*

<table>
<thead>
<tr>
<th></th>
<th>DocEmp</th>
<th>NursRel</th>
<th>RespS</th>
<th>RTH</th>
<th>LTR</th>
</tr>
</thead>
<tbody>
<tr>
<td>DocEmp</td>
<td>0.929</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NursRel</td>
<td>0.504</td>
<td>0.788</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RespS</td>
<td>0.237</td>
<td>0.49</td>
<td>0.801</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTH</td>
<td>0.457</td>
<td>0.604</td>
<td>0.388</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>LTR</td>
<td>0.435</td>
<td>0.546</td>
<td>0.372</td>
<td>0.713</td>
<td>1</td>
</tr>
</tbody>
</table>

*Notes:* DocEmp; Doctor Empathy, NursRel; Nurse Relation; RespS; Responsiveness of Staff

The heterotrait-monotrait (HTMT) ratio of correlations has been proposed as an alternative to the Fornell & Larcker Criterion (Voorhees et al., 2016). The HTMT compares the average item correlations across constructs to the geometric mean of the average correlations for items measuring the same construct. The range of validity should not exceed 0.85 for distinct constructs and 0.90 for closely related concepts (Hair et al., 2019). Table 14 shows the study’s findings, indicating that the HTMT ratio for each construct falls below the recommended thresholds, thus confirming discriminant validity.

Table 14 *Heterotrait-monotrait Ratio (HTMT)*

<table>
<thead>
<tr>
<th></th>
<th>DocEmp</th>
<th>NursRel</th>
<th>RespS</th>
<th>RTH</th>
<th>LTR</th>
</tr>
</thead>
<tbody>
<tr>
<td>DocEmp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NursRel</td>
<td>0.616</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RespS</td>
<td>0.369</td>
<td>0.786</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTH</td>
<td>0.497</td>
<td>0.677</td>
<td>0.556</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LTR</td>
<td>0.474</td>
<td>0.614</td>
<td>0.525</td>
<td>0.713</td>
<td></td>
</tr>
</tbody>
</table>

*Notes:* DocEmp; Doctor Empathy, NursRel; Nurse Relation; RespS; Responsiveness of Staff

V.3.2 *Structural Model*

Before evaluating the structural model, an analysis of multicollinearity among the constructs was conducted. The variance inflation factor (VIF) served as the metric for assessing multicollinearity. VIF values below 3 are considered favorable to ensure there are no
multicollinearities (Becker et al., 2015). VIF values were verified for the COVID period and fell below 3.

The analysis of the path coefficients and their p-values follows to determine the relationships between the constructs and the statistical significance of the model. Statistical significance will provide support for the research hypotheses.

V.4 COVID Hypotheses

H1a asked if Doctor Empathy significantly and positively impacted the rating of the hospital during COVID. The results revealed that Doctor Empathy had a significant and positive impact on the rating of the hospital pre-COVID ($\beta = 0.206$, $t = 5.213$, $p < 0.000$). Hence, H1a was supported. The results are presented in Table 14.

H1b evaluated whether Doctor Empathy significantly and positively impacted the likelihood of a positive recommendation to friends and families during COVID. The results revealed that Doctor Empathy had a significant and positive impact on the likelihood of such a recommendation ($\beta = 0.216$, $t = 5.311$, $p < 0.000$). Hence, H1b was supported. The results are presented in Table 14.

H2a centered on whether Nurse Relation significantly and positively impacted the rating of the hospital during COVID, with the results revealing that Nurse Relation did have such an impact ($\beta = 0.439$, $t = 9.740$, $p = 0.000$). Hence, H2a is supported. The results are presented in Table 14.

H2b evaluated whether Nurse Relation significantly and positively impacted the likelihood to recommend the hospital to friends and families during the COVID pandemic. The results revealed that Nurse Relation had a significant and positive impact on that likelihood ($\beta = 0.368$, $t = 7.752$, $p < 0.000$), thus supporting H2b. The results are presented in Table 14.
H3a questioned whether the Responsiveness of Staff significantly and positively impacted the rating of the hospital during COVID, with the results confirming that there was such an impact ($\beta = 0.124$, $t = 3.422$, $p < .001$), hence supporting H3a. The results are presented in Table 14.

H3b questioned whether the Responsiveness of Staff significantly and positively impacted the likelihood of recommending the hospital to friends and families during COVID. The results revealed that the Responsiveness of Staff has a significant and positive impact on that likelihood ($\beta = 0.140$, $t = 3.738$, $p < 0.000$), supporting H3b. The results are presented in Table 15, while the structural model, as generated by SmartPLS4, is illustrated in Figure 3.

**Table 15 Statistics related to Covid Hypotheses**

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Beta Coefficient</th>
<th>Standard Deviation</th>
<th>T statistics</th>
<th>P values</th>
</tr>
</thead>
<tbody>
<tr>
<td>DocEmp -&gt; RTH</td>
<td>0.206</td>
<td>0.040</td>
<td>5.213</td>
<td>***</td>
</tr>
<tr>
<td>DocEmp -&gt; LTR</td>
<td>0.216</td>
<td>0.041</td>
<td>5.311</td>
<td>***</td>
</tr>
<tr>
<td>NursRel -&gt; RTH</td>
<td>0.439</td>
<td>0.045</td>
<td>9.740</td>
<td>***</td>
</tr>
<tr>
<td>NursRel -&gt; LTR</td>
<td>0.368</td>
<td>0.048</td>
<td>7.752</td>
<td>***</td>
</tr>
<tr>
<td>RespS -&gt; RTH</td>
<td>0.124</td>
<td>0.036</td>
<td>3.422</td>
<td>0.001</td>
</tr>
<tr>
<td>RespS -&gt; LTR</td>
<td>0.140</td>
<td>0.038</td>
<td>3.738</td>
<td>***</td>
</tr>
</tbody>
</table>

*Notes: $\beta = $ Beta Coefficient, SE= Standard Error, $T= t$-Statistics, $P = $ Probability (P) value, *Relationships are significant at $P< 0.001$, DocEmp: Doc Empathy, NursRel: Nurse Relation, RespS: Responsiveness of Staff*
Table 15 shows a comparison of each path coefficient in the pre-COVID and during-COVID structural model, along with its p-values and hypothesis results.
Table 16 *Structural Equation Modeling Test Results: Pre-COVID and COVID*

<table>
<thead>
<tr>
<th>Paths</th>
<th>Pre-COVID</th>
<th>Hypothesis Supported</th>
<th>COVID</th>
<th>Hypothesis Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1a: Doctor Empathy → Rate the Hospital</td>
<td>0.124*</td>
<td>✓</td>
<td>0.206***</td>
<td>✓</td>
</tr>
<tr>
<td>H1b: Doctor Empathy → Likelihood to Recommend</td>
<td>0.19**</td>
<td>✓</td>
<td>0.216***</td>
<td>✓</td>
</tr>
<tr>
<td>H2a: Nurse Relation → Rate the Hospital</td>
<td>-0.066</td>
<td>-</td>
<td>0.439***</td>
<td>✓</td>
</tr>
<tr>
<td>H2b: Nurse Relation → Likelihood to Recommend</td>
<td>0.407***</td>
<td>✓</td>
<td>0.368***</td>
<td>✓</td>
</tr>
<tr>
<td>H3a: Responsiveness of Staff → Rate the Hospital</td>
<td>0.049</td>
<td>-</td>
<td>0.124***</td>
<td>✓</td>
</tr>
<tr>
<td>H3b: Responsiveness of Staff → Likelihood to Recommend</td>
<td>0.204***</td>
<td>✓</td>
<td>0.140***</td>
<td>✓</td>
</tr>
</tbody>
</table>

*Notes: *p*-value < 0.05, ** p*-value < 0.01, ***p*-value < 0.001*
An analysis of the difference in pre-COVID and COVID beta coefficients was done to assess the impact of the COVID-19 pandemic on the patient experience. Results are presented in Table 17.

**Table 17 Structural Model Pathway Difference: Pre-COVID vs COVID**

<table>
<thead>
<tr>
<th>Relationships</th>
<th>Difference (Pre-COVID - COVID)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DocEmp -&gt; RTH</td>
<td>-0.082</td>
</tr>
<tr>
<td>DocEmp -&gt; LTR</td>
<td>-0.027</td>
</tr>
<tr>
<td>NursRel -&gt; RTH</td>
<td>-0.506</td>
</tr>
<tr>
<td>NursRel -&gt; LTR</td>
<td>0.039</td>
</tr>
<tr>
<td>RespS -&gt; RTH</td>
<td>-0.075</td>
</tr>
<tr>
<td>RespS -&gt; LTR</td>
<td>0.064</td>
</tr>
</tbody>
</table>

Further analysis that mirrored that which was done with the previous data was completed to evaluate the impact of inpatient units that were specifically assigned for COVID-19-diagnosed patients.

**V.4.1 Descriptive Statistics-COVID Units**

Daily patient experience scores were collected from COVID-19-diagnosed patients from March 2, 2020, to February 7, 2022, and were imported into SPSS. A descriptive analysis was performed. Through descriptive analysis, I found 14 data points missing from the Response to Toileting (RespT). The descriptive Patient Experience (PX) statistics based on the indicators reveal an overall mean score of 72.19 (SD = 10.34). This shows that an average of 72.19 percent of patients gave the top box scores when rating their perception of PX during COVID. DocTr had the highest mean value, indicating that patients found that those doctors treated them with courtesy and respect. Table 18 shows the results of the descriptive analysis.
Table 18 Descriptive Statistics for Patient Experience Construct- COVID Units

<table>
<thead>
<tr>
<th>Items</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>DocEng</td>
<td>708</td>
<td>40.00</td>
<td>100.00</td>
<td>81.7101</td>
<td>13.11565</td>
</tr>
<tr>
<td>DocTr</td>
<td>708</td>
<td>40.00</td>
<td>100.00</td>
<td>86.5907</td>
<td>11.67457</td>
</tr>
<tr>
<td>NursEx</td>
<td>708</td>
<td>16.67</td>
<td>100.00</td>
<td>73.9834</td>
<td>14.50559</td>
</tr>
<tr>
<td>NursLis</td>
<td>708</td>
<td>.00</td>
<td>100.00</td>
<td>73.0933</td>
<td>14.51983</td>
</tr>
<tr>
<td>NursTr</td>
<td>708</td>
<td>.00</td>
<td>100.00</td>
<td>80.4090</td>
<td>13.50161</td>
</tr>
<tr>
<td>RespCB</td>
<td>708</td>
<td>.00</td>
<td>100.00</td>
<td>58.4485</td>
<td>18.93322</td>
</tr>
<tr>
<td>RespT</td>
<td>694</td>
<td>.00</td>
<td>100.00</td>
<td>61.8490</td>
<td>25.62188</td>
</tr>
<tr>
<td>HospCl</td>
<td>708</td>
<td>.00</td>
<td>100.00</td>
<td>61.2326</td>
<td>16.66421</td>
</tr>
<tr>
<td>PX</td>
<td>708</td>
<td>41.66</td>
<td>97.50</td>
<td>72.1910</td>
<td>10.33592</td>
</tr>
</tbody>
</table>

V.4.2 Measurement Model-COVID Unit

The constructs of Doctor Empathy (DocEmp), Nurse Relation (NursRel), and Responsiveness of Staff (RespS) were used to perform the measurement model analysis.

Reliability Analysis. Composite Reliability (CR) and Cronbach’s alpha (α) were used to assess the model’s reliability. Values between 0.70 and 0.90 are acceptable; however, in exploratory research such as this study, values between 0.60 and 0.70 are standard (Hair et al., 2019). The results of CR confirmed consistency for all constructs while α only confirmed two of the three constructs, namely, DocEmp and NursRel, as shown in Table 19. Considering that Cronbach’s alpha might underestimate reliability and composite reliability could potentially overestimate it, researchers typically regard the true reliability of the construct as lying between these two extremes (Hair et al., 2019). Bearing this in mind, the reliability of the model was validated to be stable.

Table 19 Construct Reliability Analysis (Cronbach Alpha and Composite Reliability)

<table>
<thead>
<tr>
<th></th>
<th>α</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>DocEmp</td>
<td>0.824</td>
<td>0.919</td>
</tr>
<tr>
<td>NursRel</td>
<td>0.79</td>
<td>0.866</td>
</tr>
<tr>
<td>RespS</td>
<td>0.459</td>
<td>0.779</td>
</tr>
</tbody>
</table>

Notes: DocEmp; Doctor Empathy, NursRel; Nurse Relation; RespS; Responsiveness of Staff
Construct Validity Analysis. The key measure for evaluating convergent validity is the average variance extracted (AVE) for all items within each construct. An AVE of 0.50 or higher is generally deemed satisfactory, indicating that the construct explains at least 50 percent of the variance in its items, thereby establishing convergent validity. The results show that all constructs for the COVID units have an AVE above 0.50, which means there is convergent validity. The AVE values for each construct are shown in Table 20.

Table 20 Construct Convergent Validity (AVE)

<table>
<thead>
<tr>
<th>Construct</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DocEmp</td>
<td>0.85</td>
</tr>
<tr>
<td>NursRel</td>
<td>0.621</td>
</tr>
<tr>
<td>RespS</td>
<td>0.641</td>
</tr>
</tbody>
</table>

Notes: DocEmp: Doctor Empathy, NursRel; Nurse Relation, RespS; Responsiveness of Staff

The Fornell & Larcker Criterion assesses discriminant validity, which evaluates the degree to which a construct differs from others empirically. According to Hair et al. (2019), the shared variance among all model constructs should not exceed their AVEs. Results from the COVID units indicate the establishment of discriminant validity, as seen in Table 21 (the square root of AVE is indicated in bold and italics).

Table 21 Fornell & Larcker Criterion

<table>
<thead>
<tr>
<th></th>
<th>DocEmp</th>
<th>NursRel</th>
<th>RespS</th>
<th>RTH</th>
<th>LTR</th>
</tr>
</thead>
<tbody>
<tr>
<td>DocEmp</td>
<td>0.922</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NursRel</td>
<td>0.475</td>
<td>0.788</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RespS</td>
<td>0.222</td>
<td>0.486</td>
<td>0.801</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTH</td>
<td>0.441</td>
<td>0.602</td>
<td>0.384</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>LTR</td>
<td>0.429</td>
<td>0.546</td>
<td>0.368</td>
<td>0.712</td>
<td>1</td>
</tr>
</tbody>
</table>

Notes: DocEmp; Doctor Empathy, NursRel; Nurse Relation; RespS; Responsiveness of Staff

The HTMT ratio compares the average correlations among items across different constructs to the geometric mean of the correlations among items measuring the same construct.
According to Hair et al. (2019), the recommended thresholds for validity are 0.85 for distinct constructs and 0.90 for closely related concepts. Table 22 displays the results, showing that the HTMT ratio for each construct is below these thresholds, confirming discriminant validity.

<table>
<thead>
<tr>
<th></th>
<th>DocEmp</th>
<th>NursRel</th>
<th>RespS</th>
<th>RTH</th>
<th>LTR</th>
</tr>
</thead>
<tbody>
<tr>
<td>DocEmp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NursRel</td>
<td>0.586</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RespS</td>
<td>0.352</td>
<td>0.781</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTH</td>
<td>0.485</td>
<td>0.674</td>
<td>0.551</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LTR</td>
<td>0.472</td>
<td>0.612</td>
<td>0.521</td>
<td>0.712</td>
<td></td>
</tr>
</tbody>
</table>

Notes: DocEmp; Doctor Empathy, NursRel; Nurse Relation; RespS; Responsiveness of Staff

V.4.3 Structural Model

Before evaluating the structural model, the variance inflation factor (VIF) was verified for multicollinearity among the constructs. VIF values below 3 are favorable (Becker et al., 2015). VIF values were verified for the COVID units’ data and fell below 3.

An analysis of the path coefficients and their p-values was next; that analysis evaluated the relationships between the constructs and the statistical significance of the model. Statistical significance will provide support for the research hypotheses.

V.5 COVID Units Hypotheses

H1a asked whether Doctor Empathy significantly and positively impacted the rating of the hospital made by patients diagnosed with COVID. The results revealed that Doctor Empathy had a significant and positive impact on the rating of the hospital (β = 0.202, t = 4.958, p < 0.000), hence supporting H1a. The results are presented in Table 22.

H1b evaluated whether Doctor Empathy significantly and positively impacted
the likelihood that patients diagnosed with COVID-19 would recommend the hospital to their friends and families. The results revealed that Doctor Empathy had a significant and positive impact on that likelihood ($\beta = 0.220, t = 5.295, p < 0.000$). Hence, H1b was supported. The results are presented in Table 22.

H2a evaluated whether Nurse Relation significantly and positively impacted the rating of the hospital by patients diagnosed with COVID. The results revealed that Nurse Relation had a significant and positive impact on that rating ($\beta = 0.447, t = 9.817, p = 0.000$). Hence, H2a was supported. The results are presented in Table 22.

H2b evaluated whether Nurse Relation significantly and positively impacted the likelihood of patients diagnosed with COVID-19 would recommend the hospital to their friends and families. The results revealed that Nurse Relation had a significant and positive impact on that likelihood ($\beta = 0.374, t = 8.026, p < 0.000$), supporting H2b. The results are presented in Table 22.

H3b evaluated whether the Responsiveness of Staff significantly and positively impacted the likelihood that patients diagnosed with COVID-19 would recommend the hospital to their friends and families. The results revealed that the Responsiveness of Staff had a significant and positive impact on the likelihood to recommend ($\beta = 0.138, t = 3.594, p < 0.000$). This supports H3b. The results are presented in Table 22.

H3b evaluated whether the Responsiveness of Staff significantly and positively impacted the rating of the hospital by patients diagnosed with COVID. The results revealed that the Responsiveness of Staff had a significant and positive impact on the rating of the hospital ($\beta = 0.122, t = 3.298, p < 0.001$). Hence, H3b is supported. The results are presented in Table 23. Figure 4 displays the structural model generated by Smart PLS4.
Table 23 Results Utilizing the Structural Model

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Beta Coefficient</th>
<th>Standard deviation</th>
<th>T-statistics</th>
<th>P values</th>
</tr>
</thead>
<tbody>
<tr>
<td>DocEmp -&gt; RTH</td>
<td>0.202</td>
<td>0.041</td>
<td>4.958</td>
<td>***</td>
</tr>
<tr>
<td>DocEmp -&gt; LTR</td>
<td>0.220</td>
<td>0.042</td>
<td>5.295</td>
<td>***</td>
</tr>
<tr>
<td>NursRel -&gt; RTH</td>
<td>0.447</td>
<td>0.045</td>
<td>9.817</td>
<td>***</td>
</tr>
<tr>
<td>NursRel -&gt; LTR</td>
<td>0.374</td>
<td>0.047</td>
<td>8.026</td>
<td>***</td>
</tr>
<tr>
<td>RespS -&gt; RTH</td>
<td>0.122</td>
<td>0.037</td>
<td>3.298</td>
<td>0.001</td>
</tr>
<tr>
<td>RespS -&gt; LTR</td>
<td>0.138</td>
<td>0.038</td>
<td>3.594</td>
<td>***</td>
</tr>
</tbody>
</table>

Notes: β = Beta Coefficient, SE= Standard Error, T= t-Statistics, P = Probability (P) value, *Relationships are significant at P< 0.001, DocEmp: Doc Empathy, NursRel: Nurse Relation, RespS: Responsiveness of Staff

Figure 4 Structural Model for COVID Units
VI DISCUSSION, CONTRIBUTIONS AND LIMITATIONS

VI.1 Introduction

This study was aimed at investigating the effects of the COVID-19 pandemic on patient experience. Despite the acknowledged importance of evaluating patient experience as a key measure of care quality and its link to reimbursement models, managers and executives continue to struggle to deal with the issue. Additionally, the COVID-19 pandemic, considered a Black Swan event, exacerbated that already burgeoning challenge. Several studies have investigated the COVID-19 pandemic’s impact on the patient’s experience; however, existing literature lacks a comprehensive, comparative view of the patients’ experiences, both pre- and during the COVID-19 pandemic. To explore this area of interest, the following questions were posed:

RQ1: What was the effect of the COVID-19 pandemic on changing patient experience and the rating of the hospital?

RQ2: What was the effect of the COVID-19 pandemic on changing patient experience and the likelihood to recommend the hospital to friends and family?

To address those questions, a quantitative study was conducted, utilizing surveys from patients admitted before and during the COVID-19 pandemic. For each period, the same three hypotheses were examined. A summary of the results is listed in Table 24. To offer more in-depth insights, the surveys of COVID-19-diagnosed patients were also examined. In the subsequent sections, the findings of the study are organized to offer discussion and interpretation concerning the experience of patients by way of its constructs, before the COVID-19 pandemic, during the COVID-19 pandemic, and patients diagnosed with COVID-19. The outcomes of the hypotheses relevant to each research question, alongside the literature's stance on the respective topics explored, will also be included. Next, a discussion
will include practitioner implications, theoretical implications, limitations, and future research of the study.
### Table 24 Hypotheses Results Pre- and During COVID

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Doctor Empathy, Nurse Relation, &amp; Staff Responsiveness</th>
<th>Pre-COVID</th>
<th>Supported</th>
<th>COVID</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1a</td>
<td>Doctor Empathy will have a positive and significant relationship with the rating of the hospital.</td>
<td>Positive and Significant</td>
<td>✓</td>
<td>Positive and Significant</td>
<td>✓</td>
</tr>
<tr>
<td>H1b</td>
<td>Doctor Empathy will have a positive and significant relationship with the likelihood of a positive recommendation to friends and family.</td>
<td>Positive and Significant</td>
<td>✓</td>
<td>Positive and Significant</td>
<td>✓</td>
</tr>
<tr>
<td>H2a</td>
<td>Nurse Relation will have a positive and significant relationship with the rating of the hospital.</td>
<td>Positive and Significant</td>
<td>✓</td>
<td>Positive and Significant</td>
<td>✓</td>
</tr>
<tr>
<td>H2b</td>
<td>Nurse Relation will have a positive and significant relationship with the likelihood of a positive recommendation to friends and family</td>
<td>Statistically Insignificant</td>
<td>-</td>
<td>Positive and Significant</td>
<td>✓</td>
</tr>
<tr>
<td>H3a</td>
<td>Responsiveness of Staff will have a positive and significant relationship with the rate of the hospital.</td>
<td>Positive and Significant</td>
<td>✓</td>
<td>Positive and Significant</td>
<td>✓</td>
</tr>
<tr>
<td>H3b</td>
<td>Responsiveness of Staff will have a positive and significant relationship with the likelihood of a positive recommendation to friends and family.</td>
<td>Statistically Insignificant</td>
<td>-</td>
<td>Positive and Significant</td>
<td>✓</td>
</tr>
</tbody>
</table>
VI.2 Pre-COVID Discussion

What was the effect of the COVID-19 pandemic on changing the patient experience and the rating of the hospital and the likelihood to recommend to the hospital to friends and family?

Hypotheses H1a and H1b tested Doctor Empathy and its relationship to the rating of the hospital and the likelihood to recommend to friends and family. The Doctor Empathy relationship was shown to be statistically significant, both for the rating of the hospital and the likelihood to recommend friends and family ($\beta = 0.124$, $p < 0.05$, $\beta = 0.190$, $p < 0.01$), respectively, pre-COVID. The results of the analysis as shown by the beta coefficient and the p-value support the hypothesis. Doctor Empathy, or Physician Empathy (PE), defined as the socio-emotional competence of a physician, entails the capacity to understand the patient's situation, perspective, and emotions, communicate that understanding, verify its accuracy, and apply that understanding in a helpful (therapeutic) manner (Neumann et al., 2007). Within the realm of healthcare, this concept aligns with the broader understanding of social-emotional competencies, which are commonly employed as a comprehensive term encompassing various abilities (Schoon, 2021). These abilities empower individuals to articulate, regulate, and comprehend their thoughts, emotions, and behaviors in daily scenarios and social interactions, while also facilitating adaptation to evolving circumstances. This definition suggests strong interpersonal skills are a requirement for doctors. Patients expect their doctors to not only diagnose and treat their medical conditions, but also to understand their emotions, perspectives, and concerns and possess the ability to communicate their understanding effectively. When physicians demonstrate such socio-emotional competence, patients are more likely to feel understood, respected, and supported in their healthcare journey, leading to higher levels of satisfaction and better health outcomes.
The physician-patient relationship is crucial to shaping a patient’s overall experience. How physicians portray the qualities of Doctor Empathy is through the establishment of physician-patient relationships which, according to Chandra et al. (2018), is built on effective communication and trust. Effective communication in the physician-patient relationship entails compiling a comprehensive patient history that informs appropriate examinations and subsequent management, fostering the exchange of vital information, and involving patients in the decision-making process. In terms of this relationship, trust involves two key elements: confidence in the physician’s abilities and reliance on them to act in the patient's best interest (Chandra et al., 2018).

The quality of physician communication is believed to influence both patient health outcomes and satisfaction with healthcare delivery (Al-Amin & Makarem, 2016), as well as the delivery of high-quality care to patients. Physicians who possess strong communication and interpersonal abilities excel at facilitating the exchange of information and eliciting comprehensive medical histories from patients, thereby facilitating appropriate examinations and subsequent management. That, in turn, builds trust.

The trust aspect of the physician-patient relationship involves a mutual interaction between the two parties, wherein an inherent power difference arises due to the information gap between physicians and patients. As a result, trust becomes central to the foundation of the physician-patient relationship, with patients relying on their physicians (Wu et al., 2021).

The overall rating of the hospital is based on hospital quality. From the patient’s perception, quality comprises the entirety of attributes and qualities inherent in healthcare products or services, all of which impact their capacity to meet the articulated or inferred requirements of those who utilize these products or services (Sixma et al., 1998). Meeting the
patient’s needs and expectations infers that these needs and expectations are understood. As the literature has suggested, Doctor Empathy is formative of a solid physician-patient relationship that is built on the patient’s trust in their physician through effective communication. In addition, effective physician communication correlates significantly with patient satisfaction and patients’ overall rating of their hospital encounter (Clever et al., 2008). Thus, the significance of physician communication extends beyond its direct influence on patient outcomes, as it also plays a pivotal role in shaping patients' overall rating of their hospital (O'Malley et al., 2005).

While analysis has shown that there is positive and statistical significance related to Doctor Empathy and the likelihood of recommending the hospital, there is little in the healthcare literature to support this idea. In the marketing literature, however, many argue that perceived service attributes show a significant relationship to overall customer satisfaction and customer loyalty. Strong indicators of customer loyalty have been linked to recommendations. Companies such as GE have discovered that the probability of recommending the organization (assessed through a "net promoter score") is among the most influential predictors of growth and profitability (Lonial & Raju, 2015). As mentioned in the literature review, when a customer recommends a business, it opens an opportunity to influence the decisions of others, as positive recommendations foster trust, credibility, and reputation for the business. In healthcare, referrals from loved ones serve as a vital source of information for patients in selecting their healthcare providers (Cheng et al., 2003). Research on customer loyalty, an indicator of patient recommendation, shows that the interaction between doctors and patients during a hospital stay can significantly influence overall patient satisfaction and loyalty, particularly during three critical stages. Firstly, in the pre-care stage, doctors should invest time in understanding the
patient's case and clarifying their role in the patient’s care. Secondly, during hospital care, doctors must dedicate ample time to patients and ensure thorough care to avoid compromising satisfaction and loyalty. Lastly, in the post-care stage, clear follow-up instructions enhance satisfaction, but building a personal connection by verbally providing instructions during discharge, even if other staff members are available, can further improve patient satisfaction and loyalty (Lonial & Raju, 2015).

Although, as mentioned, this claim lacks extensive support in healthcare literature, it can be applied to the issue of the positive and statistically significant relationship between Doctor Empathy and the likelihood of recommending the hospital. Insights from marketing literature highlight the influential role of perceived service attributes in customer loyalty and satisfaction, where recommendations play a pivotal role in shaping trust and credibility. This emphasizes the importance of doctor-patient interactions across various stages of care in fostering patient satisfaction and loyalty.

Hypotheses H2a and H2b tested the relationship of Nurse Relation on the rating of the hospital and the likelihood to recommend the hospital to friends and family. Nurse Relation was shown to be statistically insignificant to the rating of the hospital yet significant to the likelihood to recommend the hospital to friends and family ($\beta = -0.066, p = 0.337, \beta = 0.407, p < 0.001$), respectively. The results of the analysis as shown by the beta coefficients and the p-values partially support the hypothesis.

The results of H2a were unexpected. The construct of Nurse Relation measures the patient’s perception of how often nurses communicated effectively and how often the patient’s room and bathroom were cleaned, pre-COVID. Effective communication, which exemplifies elements of empathy, is crucial for improving the overall patient experience and nurturing
positive relationships between healthcare providers and patients. Effective communication between nurses and patients impacts patient care, and outcomes (Lidgett, 2016), while the tangible elements and the physical surroundings (i.e., patient room) play a crucial role in conveying the organization's image and ensuring health and safety standards (Elyria et al., 2023). Extant literature shows cleanliness is positively and statistically significant to overall rating (Elyria et al., 2023). In addition, there has been robust and consistent prior evidence indicating that nurse communication serves as the primary determinant of overall patient experience ratings regarding hospital care (Martsolf et al., 2016).

The lack of statistical insignificance observed for hypothesis H2a can be attributed to the many factors related to the nurse-patient relationship. Since nurses frequently engage in the most interactions with patients during their hospital stay, encompassing various tasks such as medication communication and administration, treatment planning, test administration, and care coordination, patients heavily depend on their expertise, responsiveness, and interpersonal skills. These qualities are crucial for patients’ navigation of the intricate landscape of their healthcare journey and the cultivation of a sense of trust and confidence in the treatment process. Consequently, nurses possess the capacity to significantly influence patients' overall perception and rating of the hospital.

Hypothesis 2b was shown to be statistically significant. As defined, the Nurse Relation construct measures patients' perceptions regarding the frequency of effective communication by nurses and the cleanliness in patient rooms and bathrooms before the COVID-19 era. The findings of this hypothesis align with existing literature, indicating that nurse communication is purported to influence the likelihood of recommending positively and significantly to friends and family, while the impact of cleanliness, albeit minimal, is less pronounced (Elyria, et al., 2023).
Hypotheses 3a and 3b tested the Responsiveness of Staff and its relationship to the rating of the hospital and the likelihood to recommend to friends and family. The responsiveness of staff is gauged by the frequency with which patients perceived they promptly received assistance upon requesting it via the call bell, as well as the frequency of assistance provided by staff when patients required help to use the bathroom or bedpan. The results were shown to be insignificant to the rating of the hospital but statistically significant to the likelihood of recommending friends and family ($\beta = 0.204, p >.05, \beta = 0.204, p < 0.001$). The results of the analysis, as shown by the beta coefficients and the p-values, partially support the hypothesis.

The findings of this study are also not supported by extant literature, which indicates that staff responsiveness exhibited no impact on the overall rating and a marginally significant negative effect on the likelihood of recommending the hospital (Elyria et al., 2023). Although unexpected, these results do not necessarily imply that staff responsiveness is an unimportant or less important contributor to patient satisfaction. Staff responsiveness may not be associated with patient experience ratings and the likelihood of recommending the hospital because this factor is part of a patient's base-level expectations for hospitals, i.e., patients assume that staff will be responsive to their needs (Elyria et al., 2023).

VI.3 COVID and COVID Unit Discussion

What was the effect of the COVID-19 pandemic on changing the patient experience and the rating of the hospital and the likelihood to recommend the hospital to friends and family?

Hypotheses H1a and H1b spoke to Doctor Empathy and its relationship to the rating of the hospital and the likelihood to recommend to friends and family. The Doctor Empathy relationship was shown to be statistically significant for both ($\beta = 0.206, p <0.001, \beta = 0.216, p < 0.001$) respectively, as well as for patients diagnosed with COVID ($\beta = 0.202, p <0.001, \beta =$
0.220, p < 0.001) and during COVID, therefore supporting those hypotheses. In the literature review, which centered on the patient experience during the COVID-19 pandemic, particular attention was paid to the importance of provider communication – an essential measure of doctor empathy – and uncovered disparities in patient-provider interaction, specifically highlighting the inferior quality of physician communication (Drapeaux et al., 2021). As stated previously, the concept of Doctor Empathy is defined as the socio-emotional competence of a physician, involving understanding the patient's situation, perspective, and emotions, and effectively communicating that understanding in a helpful manner (Neumann et al., 2007). This implies that patients anticipate, not only the diagnosis and treatment of their medical conditions but also comprehension of their emotions and concerns from their physicians. When physicians exhibit socio-emotional competence, this results in heightened satisfaction levels and improved health outcomes.

It is crucial to reiterate the significance of the physician-patient relationship as a foundational element for fostering effective communication and trust, thereby contributing to an overall positive experience. Effective communication involves compiling a comprehensive patient history, exchanging vital information, and involving patients in decision-making, while trust entails confidence in the physician's abilities and reliance on them to act in the patient's best interest (Chandra et al., 2018). The literature reveals that physician communication was inconsistent during the pandemic. Interestingly, this study's results show the patient's perception of Doctor Empathy and its correlation with hospital ratings and the likelihood to recommend to friends, as indicated by the variance in the beta coefficients, was greater during the COVID era compared to the pre-COVID period. It is safe to conclude that while patients shared their frustrations regarding inconsistent communication with their doctors, patients were still grateful
enough to survive that they will overlook flaws or inconsistencies in care because they are grateful to have made it through. This occurrence is due to survivorship bias and exists only when examining data from study participants who have successfully navigated a particular selection or elimination process (Gustav et al., 2023). Another deduction can be drawn that patients empathized with their care providers and recognized their willingness to continue caring for patients, despite the risks involved.

The literature addressing patients' experiences during the pandemic has underscored the impact of heightened care provider workload and burnout, resulting in patients feeling that their emotional and psychological needs were neglected (Drapeaux, et al. 2021). This raises questions about how healthcare staff managed to sustain their caregiving efforts. Burnout and heavy workload can impact effective communication as physicians are not able to spend ample time with the patients. A phenomenon known as collective resilience may play a significant role. Collective resilience refers to the ability of groups with a shared identity to demonstrate solidarity and cohesion, thereby facilitating coordination and drawing upon collective sources of support (Drury et al., 2019). It can be argued that it was this resilience that physicians employed during the pandemic to effectively coordinate care and leverage collective support systems to meet the needs of patients amidst the pandemic. Another inference that can be drawn is that patients exhibited empathy towards the healthcare providers, recognizing their willingness to provide care despite the inherent risks involved.

Hypotheses H2a and H2b examined Nurse Relation and its connection to the rating of the hospital and the likelihood to recommend friends and family (β= 0.439, p <0.001, β = 0.368, p < 0.001), respectively, as well as for patients diagnosed with COVID (β= 0.447, p <0.001, β = 0.374, p < 0.001), during COVID, supporting these hypotheses. As previously noted, the Nurse
Relation construct measures patients' perceptions of effective nurse communication and cleanliness of their surroundings pre-COVID. Effective communication, demonstrating empathy and tangibility, is essential to enhancing patient experience and fostering positive healthcare provider-patient relationships. Research has indicated that nurse communication significantly influences patient care and outcomes (Lidgett, 2016; Martsolf et al., 2016), while cleanliness is crucial for conveying the organization's image and ensuring health and safety standards (Elyria et al., 2023). Studies have also shown a positive and statistically significant correlation between cleanliness and overall patient ratings of hospital care (Elyria et al., 2023). The literature review conducted in this study, which explores facets of the patient’s experience during the pandemic, made note of the presence of inconsistent communication with healthcare providers. Despite the nurses’ communication, a key component of nurse relation, i.e., being perceived as superior to physician communication, patients continued to express dissatisfaction with communication during the COVID-19 era (Drapeaux et. al., 2021). This study’s results showed the patient’s perception of Nurse Relation and its influence on rating and the likelihood of recommendation during the pandemic to be positive and significant.

The discrepancy observed between the literature on patient experience during the pandemic and the results of this study are also observed in the element, Nurse Relation, and its impact on the rating of the hospital and the likelihood to recommend. As noted in the case of Doctor Empathy, patients who experience survivorship bias may overlook care deficiencies due to their gratitude for surviving a traumatic experience, consequentially rating their perception of Nurse Relation as positive.

As to the literature review of the patient’s experience during the COVID-19 pandemic, it is noteworthy that not many references were made to cleanliness, specifically for the inpatient
setting. This does not mean patients were not concerned with cleanliness. In a study on the patient experience during COVID-19 in the emergency room, it was found that heightened expectations regarding hygiene and social distancing were evident, and any shortcomings in meeting these expectations were reflected in patient comments. Patients appeared to be more observant of the facility’s COVID-19 protocols, including perceived deficiencies in hygiene within bathrooms or patient care areas, proximity to other patients, hallway congestion, and other procedures that deviated from optimal pandemic management practices (Chekijian et al., 2021).

Hypotheses H3a and H3b spoke to the Responsiveness of Staff and its relationship to the rating of the hospital and the likelihood to recommend friends and family (β = 0.124, p < 0.01, β = 0.140, p < 0.001), respectively, as well as for patients diagnosed with COVID (β = 0.122, p <0.001, β = 0.138, p < 0.001), during COVID, supporting those hypotheses. The literature review shows that implementing visitation restrictions had detrimental effects on both the holistic patient experience and safety outcomes. Notably, these restrictions significantly compromised ratings associated with staff responsiveness to patient needs and exacerbated occurrences of sepsis and patient falls, pivotal metrics of patient safety (Silvera et al., 2021). The results of this study, as shown by the beta coefficients and the p-values, support the hypothesis that Staff Responsiveness and its relationship to rating the hospital and the likelihood to recommend to friends and family was significant during COVID-19.

The section of the literature review focused on staff responsiveness amid the COVID-19 pandemic elucidates that a significant factor influencing the modification in patient perceptions of responsiveness is rooted in visitation restrictions. Visits from relatives and friends play a pivotal role in patient satisfaction; they serve as advocates, offer emotional support, and aid in fundamental care tasks such as feeding, hydration, mobility, and other activities essential for
daily living, thereby affording nurses the capacity to attend to more specialized care duties. Despite the prevailing literature underscoring patient discontentment with visitation limitations, which consequently shapes their unfavorable appraisal of responsiveness, the findings of this study do not reflect this. This deviation prompts the consideration that patients may exhibit empathy towards healthcare personnel amidst the exigencies of the pandemic.

VI.4 Discussion Summary

Revisiting the research questions:

What was the effect of the COVID-19 pandemic on changing the patient experience and the rating of the hospital?

What was the effect of the COVID-19 pandemic on changing the patient experience and the likelihood to recommend the hospital to friends and family?

The findings of this study provide valuable insights into the hypotheses posed and contribute to our understanding of the patients’ experience during this critical period.

In the period preceding the COVID-19 pandemic, four out of the six hypotheses under examination found empirical support. In contrast, during the COVID-19 era, all six hypotheses demonstrated significant support. However, it is noteworthy that two of the six coefficients exhibited a decline amidst the pandemic when compared to their pre-pandemic counterparts.

A look at the differences between those periods in regards to the patient's perceptions of Doctor Empathy within the contexts of both hospital rating and the likelihood of recommending the hospital to friends and family, reveals an increase in the coefficients by 0.08 and 0.07 respectively. This observed positive impact of the pandemic on Doctor Empathy, hospital rating, and recommendations to friends and family can be attributed to the collective resilience exhibited by healthcare practitioners. During periods of crisis, cohesive groups, unified by shared
experiences and adversities, often consolidate to offer mutual support, exchange insights, and provide pragmatic advice. Moreover, healthcare professionals fostered a supportive environment conducive to peer interaction, where emotions and apprehensions could be openly shared, thus ameliorating the emotional strain precipitated by the pandemic. Patients were also more grateful to the care they received as well during COVID.

It can be argued that the pandemic’s effect on patient experience led patients to express more gratitude for the care they received amidst uncertainty. Additionally, heightened teamwork among physicians, facilitated by collective resilience, contributed to a notable increase and positive correlation between Doctor Empathy, hospital rating, and recommendation. Consequently, these factors contributed to the substantiation of both hypotheses 1a and 1b during the pandemic.

The pre-pandemic assessment revealed a negative and statistically insignificant relationship between Nurse Relations and hospital rating and a positive and significant relationship with recommendation. During the pandemic, the relationships between Nurse Relation and hospital rating demonstrated a noteworthy positive and statistically significant change, while the relationship with recommendation showed a positive albeit diminished coefficient value. Several factors may account for this transformation. Firstly, akin to physicians, nurses experienced the collective resilience engendered by the pandemic. They confronted similar anxieties, emotional strains, and occupational hazards inherent in patient care during this time. Secondly, there was a surge in nursing staff numbers to meet the heightened demands resulting from the influx of patients and increased acuity levels prompted by the pandemic. Moreover, nurses received financial incentives in the form of bonuses. The observed decrease in the coefficient of Nurse Relation and its association with recommendation may be attributed to
patients' reluctance to endorse a hospital, considering the inherently personal nature of such endorsements and the potential accountability felt by patients in the event of adverse outcomes. Likewise, the patients' increased gratitude for their care during the pandemic also contributed to an increase in their experience.

In summary, it can be argued that the pandemic's effect on patient experience, through Nurse Relation, fostered increased teamwork among nurses, enabled by collective resilience. Additionally, the pandemic also impacted changes in hospital policies, including increased nurse hiring and incentives, which further contributed to these dynamics. Moreover, the surge in patient gratitude toward care providers who risked their lives to deliver care provides additional support. Consequently, these factors lend credence to both hypotheses 2a and 2b during the pandemic.

Pre-pandemic, Responsiveness of Staff exhibited insignificant in its relationship with hospital rating but showed to be significant in its association with likelihood to recommend. However, during the pandemic, Responsiveness of Staff became significant for both hospital rating and likelihood to recommend. This shift in significance between staff responsiveness and rating may be attributed to increased teamwork among staff facilitated by collective resilience, alongside patients demonstrating elevated gratitude towards their care providers amid the pandemic.

Furthermore, a decrease in the coefficient observed in the relationship between Responsiveness of Staff and likelihood to recommend during the pandemic can be linked to the imposition of a no-visitation policy. Although implemented to safeguard visitors, staff, and patients, the absence of loved ones' visitation was detrimental to patients' physical and emotional needs, particularly for those in acute conditions.
To summarize, the pandemic's effect on patient experience, as evidenced by the Responsiveness of Staff and hospital rating, underscored the emergence of enhanced teamwork among staff fostered by collective resilience. Additionally, changes in the hospital's visitation policy during the pandemic, while challenging for patients, did not diminish their gratitude for the care received. Consequently, hypotheses H3a and H3b found support during the pandemic.

VI.5 Practical Contribution

This research investigated the influence of the COVID-19 pandemic on the patient experience by conducting a comparative examination of patient experience data from pre-COVID and during COVID periods. The analysis uncovered variances between these time frames, along with disparities between the existing literature and the findings of the study. As discussed, patient experience not only impacts clinical outcomes but is also tied to hospital reimbursement. Consequentially, this study holds potential utility for practitioners, particularly healthcare executives and clinical directors. In the forthcoming sections, particular considerations and recommendations for practitioners will be presented.

Doctor Empathy emerged as a significant factor affecting both hospital ratings and recommendations, both before and during the pandemic. Notably, even within the focused analysis of COVID-19-positive patients, Doctor Empathy retained its significance in influencing both such ratings and recommendations. This consistency reiterates the critical role played by physicians in shaping patient experiences. The literature underscores the importance of establishing a strong physician-patient relationship through effective communication and the establishment of trust (Chandra et al., 2018). However, research completed during or based on the pandemic period indicated discrepancies in physician communication. To ensure consistent
Chief Medical Officers must encourage physicians to prioritize effective communication strategies. The literature underscores the substantial impact of physician empathy on patient experience. Empathy training initiatives, including face-to-face sessions, role-playing, simulation games, Balint groups, and curricula informed by neuroscience, have proven effective in augmenting the empathy of healthcare professionals. These programs typically cover issues such as providing explanations of treatments, offering non-specific empathic responses, maintaining a friendly demeanor, utilizing non-verbal cues (such as leaning forward and nodding), and practicing active listening. In addition, physician empathy training holds promise for enhancing patient-doctor relationships and nurturing empathic skills, underscoring the importance of incorporating such training into medical education (Wu et al., 2021).

The results of this research also indicated the Nurse Relation relationship to be significant for both rating and the likelihood to recommend the hospital to friends and family during the pandemic. Clinical directors and managers should implement annual training in communication and empathy that encompasses both theoretical and a practical component. The theoretical component should include:

- Lectures on empathy and communication: Nurses learn about the importance of empathy, active listening, and effective communication.
- Theoretical frameworks: Nurses learn about theoretical frameworks, such as emotional intelligence, compassion fatigue, and patient-centered care.
- Empathy research and studies: Nurses learn about research on empathy in healthcare, including the impact on patient outcomes and satisfaction.
- Case studies and analysis: Nurses analyze case studies to identify empathetic communication styles.

The practical component should include:
• Role-playing: Nurses practice active listening and empathy in simulated patient interactions.

• Case studies and scenarios: Nurses discuss and practice empathetic responses to real-life patient scenarios.

• Communication skills practice: Nurses practice effective communication skills, such as reflective listening and asking open-ended questions.

• Empathy-building activities: Nurses participate in activities that help them understand patients’ experiences, such as “walking in patients’ shoes” exercises.

• Shadowing: Nurses should be observed by an experienced professional as they engage with patients, followed by coaching sessions to refine their interactions.

Clinical managers should emphasize the significance of their staff responsiveness to patients, initially by underscoring its impact on patient safety and experience. Subsequently, managers should educate all staff on the importance of establishing clear expectations with patients, which involves effectively communicating wait times, treatment plans, and care goals. This fosters trust and ensures that patients are well-informed. Managers are encouraged to also implement purposeful hourly rounding and bedside shift reports. A bedside shift report:

• Improves communication: Conducting shift changes at the bedside ensures that important patient information is shared among staff and the patient, reducing miscommunication and errors.

• Promotes patient involvement: Patients are engaged in the transition process, allowing them to ask questions and clarify concerns.

• Increases accountability: Staff are more accountable for their actions and decisions when reporting at the bedside.

Hourly Rounding:

• Facilitates proactive issue identification: Staff can identify potential issues before they escalate, preventing complications and improving patient outcomes.

• Encourages regular patient checks: Hourly rounding ensures that patients receive regular checks from staff, addressing their needs and concerns promptly.
• Increases staff responsiveness: By regularly checking on patients, staff are more attuned to their needs, leading to more responsive care.

Finally, the Centers for Disease Control and Prevention (CDC) plays a pivotal role in disseminating crucial information during public health crises, such as the COVID-19 pandemic. Effective communication is essential in ensuring that healthcare providers, public health agencies, and the public are well-informed about disease prevention measures, symptoms, testing protocols, and treatment guidelines. The findings from this study can provide valuable insights to the CDC for use in refining their communication and education strategies. Firstly, the study highlights the importance of effective communication in patient care, particularly during a pandemic. Patients rely on clear and timely communication from healthcare providers to understand their diagnosis, treatment options, and care plans. The study's findings can inform the CDC's guidance on communication strategies for healthcare providers, emphasizing the need for clear, empathetic, and transparent communication practices.

Moreover, the study underscores the significance of staff responsiveness in patient care. Patients value healthcare providers who are responsive to their needs, especially during challenging circumstances like the COVID-19 pandemic. The CDC can use the findings from this research to inform their treatment guidelines and recommendations for healthcare facilities, emphasizing the importance of fostering a culture of responsiveness among healthcare staff.

Overall, the findings from this study can serve as valuable evidence for the CDC to inform their operational strategies for healthcare communication and education. By incorporating insights from this research into their guidance and recommendations, the CDC can better support healthcare providers, public health agencies, and the public in navigating future public health emergencies effectively.
VI.6 Theoretical Contribution

This study has endeavored to make several contributions to academic literature. Each of these contributions will be elaborated upon in the subsequent paragraphs.

First, this study addressed a gap in the literature by investigating the effects of the COVID-19 pandemic on patient experience, hospital ratings, and the likelihood of recommending the hospital. Conducting a comparative analysis of patient experience data from both pre-COVID and during-COVID periods, with a particular emphasis on the inpatient setting, allowed for a thorough examination. Furthermore, a more detailed analysis was conducted to explore potential differences among COVID-positive patients.

Second, the need for additional research to explore the influence of the COVID-19 pandemic on patients' perceptions of healthcare quality and their likelihood to recommend hospitals (Belasen, 2020) has been acknowledged. While there has been research conducted on the impact of COVID-19 on patient experience, there is a paucity of studies that comprehensively examine the interrelationship between patient experience, its effect on healthcare quality, and the likelihood of recommending a hospital.

Thirdly, an examination of COVID-positive patients was conducted to ascertain whether discrepancies existed in their patient experience, hospital ratings, and likelihood to recommend, in comparison to the findings derived from pre-COVID patient experience data and data obtained during the COVID period.

Finally, I built upon the existing SERVQUAL theory by using it as a guide to develop my constructs of patient experience. While the original theory provided a foundation for understanding service quality, I recognized the need to tailor it to the specific context of healthcare and patient experience. By adapting the SERVQUAL theory I provided a more
comprehensive understanding of patient experience and its drivers, ultimately informing strategies to improve healthcare quality and patient-centered care.

VI.7 Limitation and Future Research

The primary constraint of this study lies in the utilization of the HCAHPS survey instrument. This survey hinges on patients' self-disclosed encounters, which can be subjective and predisposed to bias. To uphold data accuracy and academic rigor, measures such as data validation, survey validation, peer review, and the application of suitable statistical techniques were implemented. However, the data consists of patients who survived the pandemic and therefore introduces survivorship bias. To address this limitation, future research should incorporate patient comments and employ qualitative analysis techniques to gain deeper insights into their experiences.

Secondly, this study examined the experiences of hospitalized patients. Hospitalized individuals provide a distinct perspective as they have spent at least one night in the hospital, enabling them to offer valuable insights into the quality of care received. While their firsthand experiences allow for a thorough assessment of care quality, identification of areas for enhancement, and informing quality improvement initiatives, their experiences are not representative of those patients who receive care in other settings. Therefore, future research should encompass a broader spectrum of care settings to capture the diverse experiences of patients receiving care in various healthcare environments.

Finally, this study scrutinized the experience both before and during the COVID-19 pandemic within the inpatient setting. While this investigation offered a more focused perspective by analyzing the experiences of COVID-positive patients, the inclusion of additional patient demographics would further enhance its comprehensiveness. Hence, future research
should emulate this type of study while incorporating specific patient demographic characteristics, such as age, gender, socioeconomic status, and comorbidities. Doing so would enable a more nuanced understanding of how various demographic factors intersect with the patient experience during healthcare crises like the COVID-19 pandemic. This expanded approach would facilitate interventions and strategies tailored to address the diverse needs of patient populations, ultimately enhancing the effectiveness of healthcare delivery and patient outcomes.
## APPENDIX: SURVEY QUESTIONS

### Survey Questions

<table>
<thead>
<tr>
<th>Component</th>
<th>Individual Item</th>
<th>Composite Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleanliness</td>
<td>• During this hospital stay, how often were your room and bathroom kept clean?</td>
<td>• During this stay, did doctors treat you with courtesy and respect?</td>
</tr>
<tr>
<td>Quietness</td>
<td>• During this hospital stay, how often was the area around your room quiet at night?</td>
<td>• During this hospital stay, how often did doctors listen carefully to you?</td>
</tr>
<tr>
<td><strong>Doctor Communication</strong></td>
<td></td>
<td>• During this hospital stay, how often did doctors explain things in a way you could understand?</td>
</tr>
<tr>
<td>Nurse Communication</td>
<td>• During this hospital stay, did nurses treat you with courtesy and respect?</td>
<td>• During this hospital stay, did nurses treat you with courtesy and respect?</td>
</tr>
<tr>
<td><strong>Nurse Communication</strong></td>
<td>• During this hospital stay, how often did nurses listen carefully to you?</td>
<td>• During this hospital stay, how often did nurses listen carefully to you?</td>
</tr>
<tr>
<td>Staff Responsiveness</td>
<td>• During this hospital stay, how often did nurses explain things in a way you could understand?</td>
<td>• During this hospital stay, after you pressed the call button, how often did you get help as soon as you wanted?</td>
</tr>
<tr>
<td><strong>I. Global Item</strong></td>
<td>• How often did you get help in getting to the bathroom or in using a bedpan as soon as you wanted?</td>
<td>• During this hospital stay, after you pressed the call button, how often did you get help as soon as you wanted?</td>
</tr>
<tr>
<td>Overall hospital</td>
<td>• Using any number from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible, what number would you use to rate this hospital during your stay?</td>
<td></td>
</tr>
<tr>
<td>Recommend Hospital</td>
<td>• Would you recommend this hospital to your friends and family?</td>
<td></td>
</tr>
</tbody>
</table>
REFERENCES


https://www.proquest.com/scholarly-journals/effects-hospital-level-factors-on-patients/docview/1772809897/se-2


https://doi.org/10.55057/ajrbm.2022.4.4.4


https://doi.org/10.1016/s0277-9536(00)00235-5


https://doi.org/10.1108/08876049610148602


experience with care: Differences between cross-sectional and longitudinal estimates.

Health Services Research, 51(6), 2221–2241. https://doi.org/10.1111/1475-6773.12462


https://doi.org/10.35680/2372-0247.1596


Voorhees, C. M., Brady, M. K., Calantone, R., & Ramirez, E. (2016). Discriminant validity testing in marketing: an analysis, causes for concern, and proposed remedies. *Journal of*


VITA