Examining the Effect of the COVID-19 Pandemic on Staff Responsiveness, Rating and Recommendation: A Longitudinal Study

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ABSTRACT

Background

Staff responsiveness to patients' needs, a key patient experience indicator, as measured by interactions with doctors, nurses, and other staff, is a crucial measure of the quality of care. Improving patient experience is a top priority, as the hospital's reputation is tied to these publicly displayed scores. Despite hospital executives' improvement efforts, increasing staff responsiveness remains a persistent challenge. The COVID-19 pandemic further amplified this issue by placing additional strain on hospitals, underscoring the need for strategies to enhance the patient's experience.

Aim

There is a lack of empirical research on the patient's perception of staff responsiveness, the hospital's rating, and the likelihood to recommend to friends and family before and during the pandemic.

Method

Using SERVQUAL theory as a guide, the authors conducted an empirical, quantitative, longitudinal study through time series and regression analysis of patient experience HCHAPS surveys data (52 weeks before and 52 weeks during COVID).

Results

The results show that staff responsiveness, hospital rating, and likelihood to recommend declined overtime during the pandemic. Furthermore, this study underscores the value of staff responsiveness to patients especially during times of crisis.

Impact

The awareness of this indicator will empower administrators and government agencies in disaster preparedness planning and help mitigate risks that compromise patient experiences.

PURPOSE

This study examines the impact of the COVID-19 pandemic on patient experience, specifically the patients' perception of staff responsiveness, and how this, in turn, influences their rating of the hospital and the likelihood of recommending the hospital to friends and family. Staff responsiveness, a key indicator of patient satisfaction, patient safety, and overall quality of care, is pivotal in shaping the patient's experience. The likelihood of recommending the hospital to friends and family and the rate of the hospital is measured through patient experience surveys to assess patient-perceived quality of care and their referral to the hospital. An increase in the patient experience score of staff is shown to increase patient satisfaction, patient outcomes, hospital rate, and patient likelihood to recommend.

The findings of this study have many implications for practitioners, particularly healthcare executives, Human Resource Management practitioners, clinical directors, and government agencies. This study informs training programs to maintain and improve staff responsiveness through focused areas of communication and empathy, serves as a guide for staffing decisions during times of crisis to ensure that adequate personnel is available to maintain high levels of staff responsiveness, and informs agencies such as the Center for Disease Control on their operational strategies for healthcare communication and education.

PROBLEM OF PRACTICE

Despite patient experience being a fundamental component of assessing healthcare quality for the past 30 years, it remains a concern for many healthcare executives and clinical managers. Research shows that staff responsiveness- a crucial patient experience indicator and the focus of this study- impacts quality of care (Saman, Kavanagh, Johnson, Lutfiyya, 2013 & Yang, Huang, Mukamel, 2018). Additionally, the patients' experience impacts their rating of the hospital and

the likelihood of recommending it to friends and family. How patients perceive service quality influences their inclination to recommend a hospital (Hendsun, 2022), and hospital ratings serve to assist consumers in making well-informed decisions (Popovich, Vogus, Iacobucci, & Austin 2020). As healthcare executives strive to improve patient experience, the COVID-19 pandemic occurred, exacerbating an already challenging environment by increasing patient load while straining resources. While the pandemic's impact on patient experience has been studied across many specialties and areas in healthcare, a comparative, time series analysis on its impact in the inpatient setting on staff responsiveness, the rating of the hospital, and recommendation of the hospital have not been done. This study aims to contribute novel insights into this area by facilitating decision-making in quality of care during crises.

RESULTS

Results of the regression analysis shows a significant positive relationship between the responsiveness of staff and rating of the hospital pre-COVID ($r = .44, p < 0.001$) and during COVID $(r = .53, p < 0.001)$ and between the responsiveness of staff and likelihood to recommend pre-COVID $(r = .34, p < 0.001)$ and during COVID $(r = .55, p < 0 .001)$. Additionally, the time series analysis shows that the pandemic had an impact on staff responsiveness, hospital rating, and likelihood to recommend particularly during surges when positive cases were highest.

CONCLUSION

This study shows the impact the COVID-19 pandemic had on staff responsiveness, rating of the hospital, and the likelihood to recommend. During the pandemic, staff responsiveness, rate of the hospital, and the likelihood to recommend scores fluctuated. The beginning of the pandemic was marked with high patient experience scores but eventually declined overtime. This initial boost

was due to displayed collective resilience of staff in the workplace at the onset of the pandemic. Collective resilience fosters teamwork and collaboration, open communication, and peer and leadership support to improve the patient's experience. Providing professional training and development can promote the skills necessary to enhance the quality of care and continuous improvement. Organizations with healthcare staff who exhibit team cohesiveness, provide empathetic care, and communicate effectively have better patient outcomes, overall patient experience, rating of the hospital, and likelihood to recommend to friends and family.

PRACTICAL RELEVANCE

To assess staff responsiveness, the HCAHPS survey queries patients after discharge on their hospital stay by asking: *"During this hospital stay, after you pressed the call button, how often did you get help as soon as you wanted?"* & *"How often did you get help in getting to the bathroom or in using a bedpan as soon as you wanted? "*

Organizations aiming to improve staff responsiveness should prioritize professional training and development, emphasizing effective communication, empathy, and teamwork. Professional development and training in these areas significantly improve staff responsiveness and, therefore, the rate of the hospital and the likelihood to recommend. To encourage staff participation, organizations should award continuing education credits (CEs) to training as these are a requirement for employment in the healthcare setting and for staff to remain compliant.

Additionally, this research advocates for public health through partnerships with agencies such as the Centers for Disease Control and Prevention (CDC). The CDC is pivotal in disseminating crucial information during public health crises, such as the COVID-19 pandemic. This study provides valuable insights to the CDC to refine their communication and education strategies for healthcare organizations.

In summary, professional training and development provide a platform to enhance organizational performance and patient experience. Our findings recommend emphasizing effective communication, empathetic care, and teamwork to improve the overall patient experience. Moreover, this research advocates for public health partnerships with government agencies by offering keen insights to refine their communication and education initiatives during public health crises.

RESEARCH QUESTION

This study aims to examine the effect of the COVID-19 pandemic on staff responsiveness, hospital rating, and likelihood of recommending the hospital to friends and family. The focus is to determine if a crisis, such as the COVID-19 pandemic, impacts patients' perceptions of staff responsiveness, how they rate the hospital, and their likelihood of recommending the hospital to friends and family. To analyze this effect, the authors pose the following research question:

What is the effect of the COVID-19 pandemic on changing the responsiveness of staff, rating of the hospital, and likelihood to recommend?

METHOD AND DESIGN

This empirical, quantitative study examined the effect of the COVID-19 pandemic on patients' perceptions of staff responsiveness, hospital rate, and the likelihood to recommend. The Hospital Consumer Assessment of Healthcare Providers and Systems (H-CAHPS) survey instrument measured patients' perceptions of their experience. The SERVQUAL theory was used as a guide to frame this study.

DATA COLLECTION, SAMPLE, and ANALYSIS

The secondary patient experience data in this study represents daily averaged patient experience scores of all adult patients discharged from the inpatient units of two metro Atlanta hospitals with a total of 962 beds. This study spanned 52 weeks prior to the first COVID-19 positive case on March 2, 2020, and 52 weeks thereafter, was extracted from Press Ganey (Norder, 2020). The patient experience data was used to create a line graph for a time series analysis of the two periods. The data was analyzed by comparing relative weeks of high and low scores across the study's variables between the two periods to control for any seasonal or periodic factors that may influence the independent variable and isolate the impact of the pandemic. Peak and trough weeks for each variable was analyzed in conjunction with surges of positive daily cases in the state of Georgia to determine the correlation between pandemic waves and the fluctuations seen in variables to identify patterns. Next, the authors ran a regression analysis to measure the strength and direction of the relationship between staff responsiveness, the rate of the hospital, and the likelihood of a recommendation. Interviews with staff were also conducted to gain additional insights into their experience during the pandemic.

PRACTICAL PROBLEM

Staff responsiveness, a measure of patient experience, assesses the timeliness of hospital staff to patients' requests and is a crucial aspect of patient-centered care. Inadequate responsiveness to patients' needs can lead to feelings of frustration, perceived neglect, and, ultimately, patient dissatisfaction with their experience. In addition, the untimely responsiveness of staff increases the chances of fall risk, which is an adverse safety event. Consequently, these factors all affect the patient's rating of the hospital and their likelihood to recommend it to friends and family. To further exacerbate this matter, amidst a growing staffing shortage and other demands on

hospitals' already scarce resources, the COVID-19 pandemic occurred. Despite these mounting pressures, staff responsiveness continues to play a key role in the patient's experience, and its impact is more evident in times of crisis.

LITERATURE REVIEW

This research examines the COVID-19 pandemic impact on staff responsiveness, their rating of the hospital, and their recommendations to friends and family before and during the COVID-19 pandemic in the inpatient setting.

While many journals discuss some aspects of this research in tandem, the authors found no research that provided a comprehensive examination of the impact of the COVID-19 pandemic, before and during its emergence, on staff responsiveness, hospital rating, and hospital recommendation to friends and family. The literature review is centered on keywords addressing COVID-19 and patient experience.

PATIENT EXPERIENCE

Understanding patients' experiences provides insight into healthcare and vital, fundamental steps toward partnering with patients and families to drive improvement. Evidence of the link between patient experience and clinical outcomes has shown that hospitals that perform well on patient care experience surveys also do better on clinical metrics (Luxford & Sutton, 2014). There have been many discussions on the appropriate definition of patient experience (Wolf, Niederhauser, Marshburn, & LaVela, 2014) argued that there is considerable divergence in perspectives within the healthcare industry when it comes to defining patient experience. For this research, we will use the Beryl Institute's definition, which states that patient experience is the sum of all

interactions shaped by an organization's culture, influencing patient perceptions across the continuum of care (Wolf et al., 2014).

MEASURING PATIENT EXPERIENCE

Patient experience measurement 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 patient's 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 the Hospital Environment also gives patients the response option of "Never," "Sometimes," "Usually," or "Always." The composite measures are then derived from aggregating individual question responses, where 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, Oppenlander, Belasen & Hertelendy, 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, where 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.” How patients perceive service quality 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 in evaluating the performance and value of the healthcare system (Popovich et al., 2020). The impact of overall rating and likelihood to recommend scores can also be seen from an economic standpoint. Health systems that have demonstrated better patient experience performance, as measured by the HCAHPS survey’s likelihood to recommend and overall rating, 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).

THE COVID PANDEMIC

In December 2019, multiple cases of respiratory illness were reported in the Wuhan Province of China. The virus was identified as a novel coronavirus, now known as COVID-19. By the end of January 2020, the virus' rapid spread across the globe called for the World Health Organization (WHO) to declare a global health emergency. 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.

PATIENT EXPERIENCE, COVID-19 PANDEMIC, AND IN-PATIENT

Research on the COVID-19 pandemic within hospitals revealed challenges experienced by other healthcare settings that impacted patients' experiences.

*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, Dubey, Hall, Catzen, Blanch-Hartigan, & Schwartz, 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, Jenson, & Fustino 2021). The mandatory use of PPEs by patient-facing staff, such as masks, was mentioned as impacting patients' experience. (Key, Kulkarni, Kandhari, Jawad, Hughes, & Mohanty, 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 not to impact the patient experience; patients believed the staff needed to wear PPEs to protect themselves and the patients, with most revealing little anxiety about the practice. However, there are conflicting research results regarding mask usage and patient perception. (Drapeaux et al., 2021) noted that patients reported mask donning negatively affected communication. The most common communication barrier during the COVID-19 pandemic was that patients and family members could not recognize the face and voice of their healthcare providers due to masking and the use of PPE (Wittenberg, Goldsmith, Chen, Prince-Paul, & Johnson, 2021).

Staff Burnout. Burnout among healthcare providers has always been a concern 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).

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's 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 negatively affected the overall patient experience and patient safety outcomes. Specifically, it significantly impacted ratings related to the staff's responsiveness in addressing patient needs and the occurrence of sepsis and patient falls, which are crucial indicators of patient safety (Silvera, Wolf, Stanowski, & Studer 2021 and Montesanti, MacKean, Fitzpatrick, & Fancott 2023.)

Framing The widely used metric for assessing service quality is SERVQUAL, a tool created by (Parasuraman, Zeitham, & Berry, 1988), which was designed to measure service quality as perceived by the customer (Asubonteng, McCleary, & Swan 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 the quality of care, while tangibility was shown to have the least impact in the inpatient setting (Al Atar & Hamid, 2023). 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.

As the constraints on visitation during the pandemic underscore the significance of staff responsiveness in ensuring patient satisfaction, it is imperative to examine the broader literature on staff responsiveness, which is the focus of this study.

Staff Responsiveness Staff responsiveness is customarily researched as a component of the overall patient experience. Many studies show adequate staff responsiveness decreases patient fall risks (Silvera et al., 2021), hospital-acquired infection (Saman et al., 2013), readmissions (Yang et al. 2018), and consequentially, patient rating of the hospital and their likelihood to recommend. Extant literature, however, shows conflicting results on staff responsiveness and its impact on the rating of the hospital and the likelihood of recommendation. According to (Elyria, Julie, & Davis 2023), staff responsiveness shows no effect on patients' rating of the hospital and a slightly significant yet negative effect on patients' likelihood to recommend the hospital. One study's findings are particularly interesting, which state that staff responsiveness patient experience scores during the pandemic drastically decreased compared to pre-pandemic (Elliot et al., 2023).

Previous studies e.g., (Al Atar & Hamid, 2023; Drapeaux et al., 2021; Elliot et al; Key et al., 2021; Hendsun, 2022; Montesanti et al. 2023; and Silvera et al., 2021) have examined the effects of COVID-19 on patient experiences. What is unknown however is the pandemic's impact on patient experience during surges of daily positive cases with specific attention given to staff responsiveness, the rating of the hospitals, and the likelihood to recommend. Therefore, a gap in the literature exists. 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).

FINDINGS

The time series analysis shows significant fluctuations from the pre-COVID-19 pandemic, from March 4, 2019, to March 3, 2020, **Figure 1.** and during the COVID-19 pandemic, from March 4, 2020, to March 7, 2021.

Figure 1.

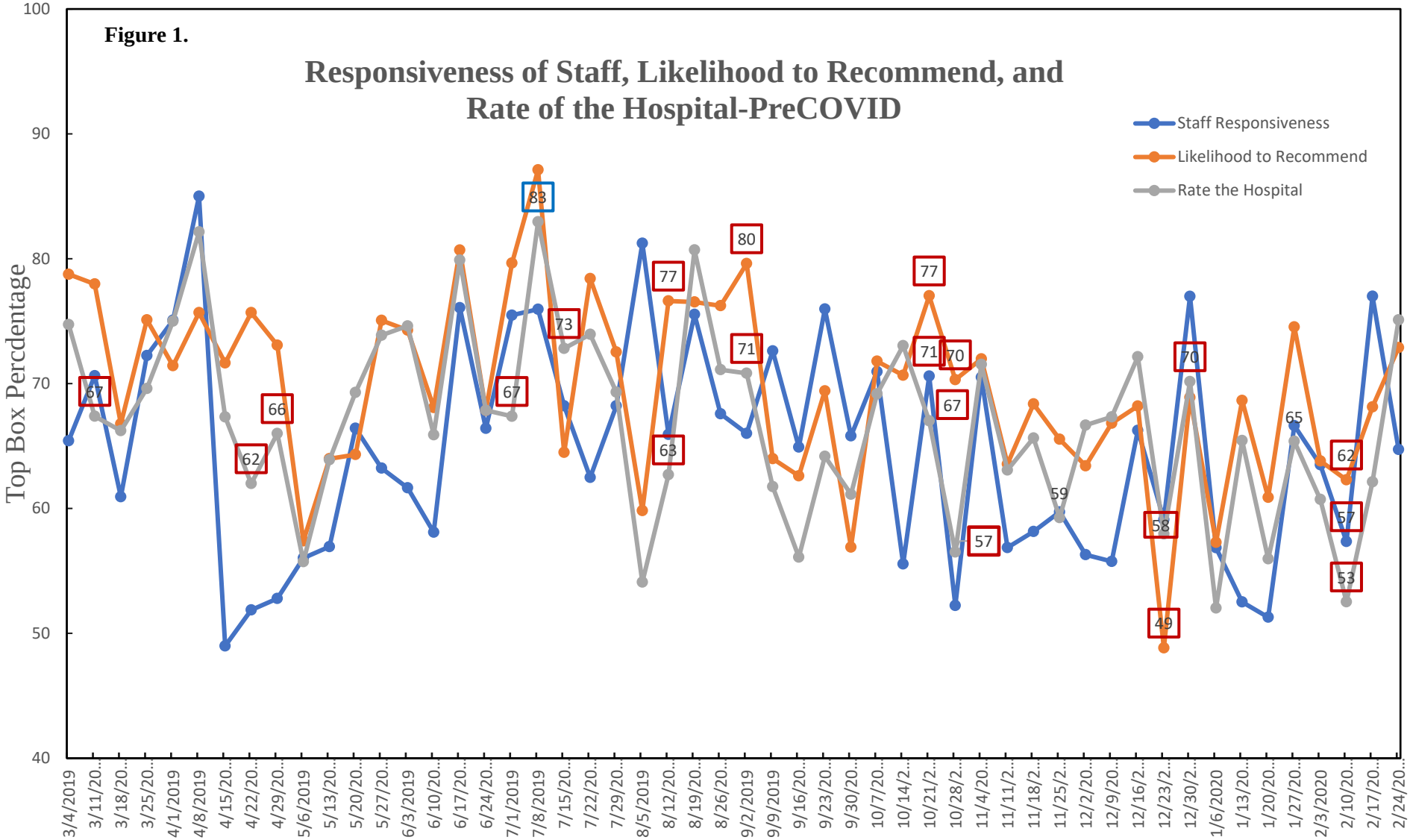
Responsiveness of Staff, Likelihood to Recommend, and Rate of the Hospital-PreCOVID
Staff Responsiveness
Likelihood to Recommend
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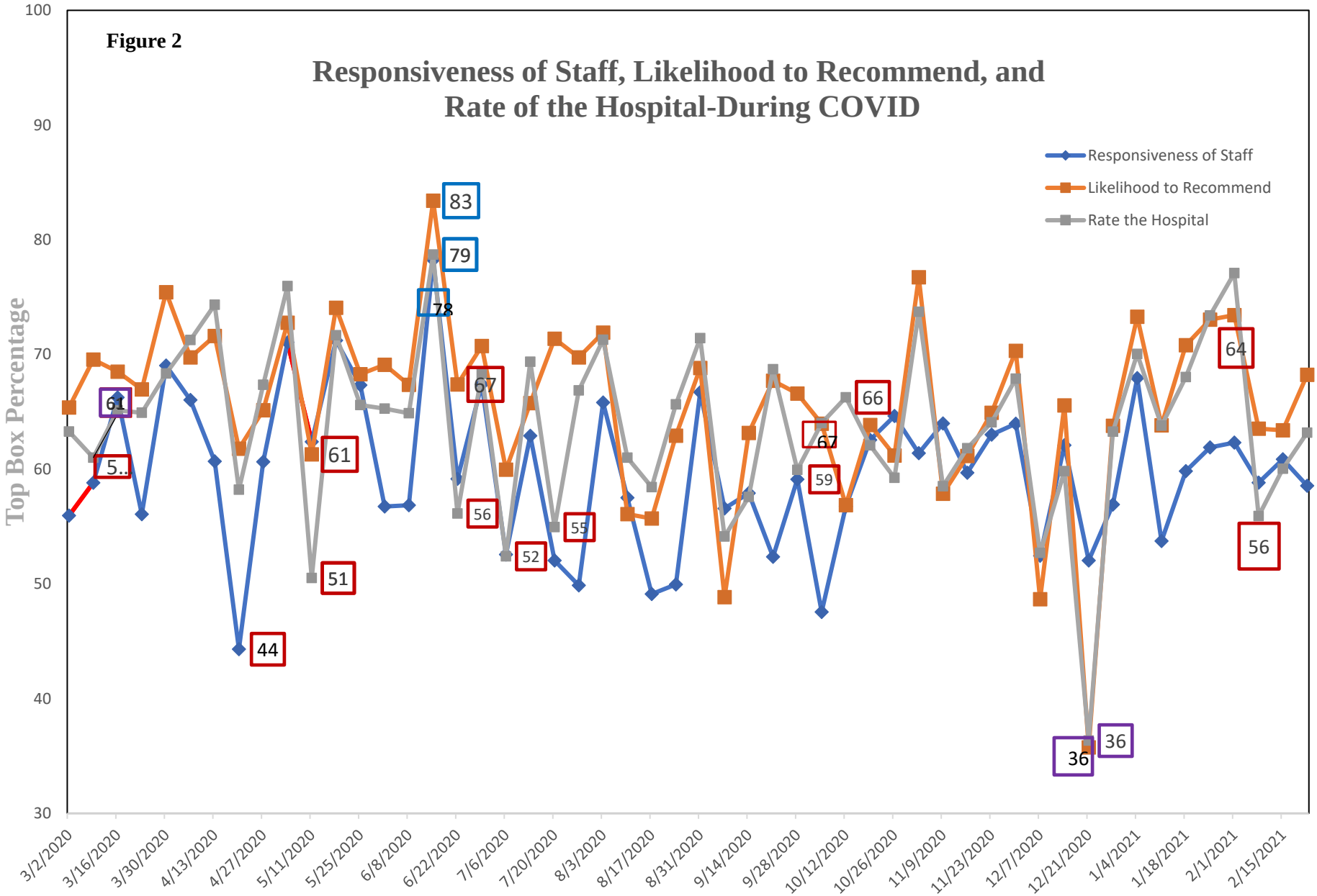
Figure 2


Responsiveness of Staff, Likelihood to Recommend, and Rate of the Hospital-During COVID
Responsiveness of Staff
Likelihood to Recommend
Rate the Hospital
Top Box Percentage
100
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3/30/2020
4/13/2020
4/27/2020
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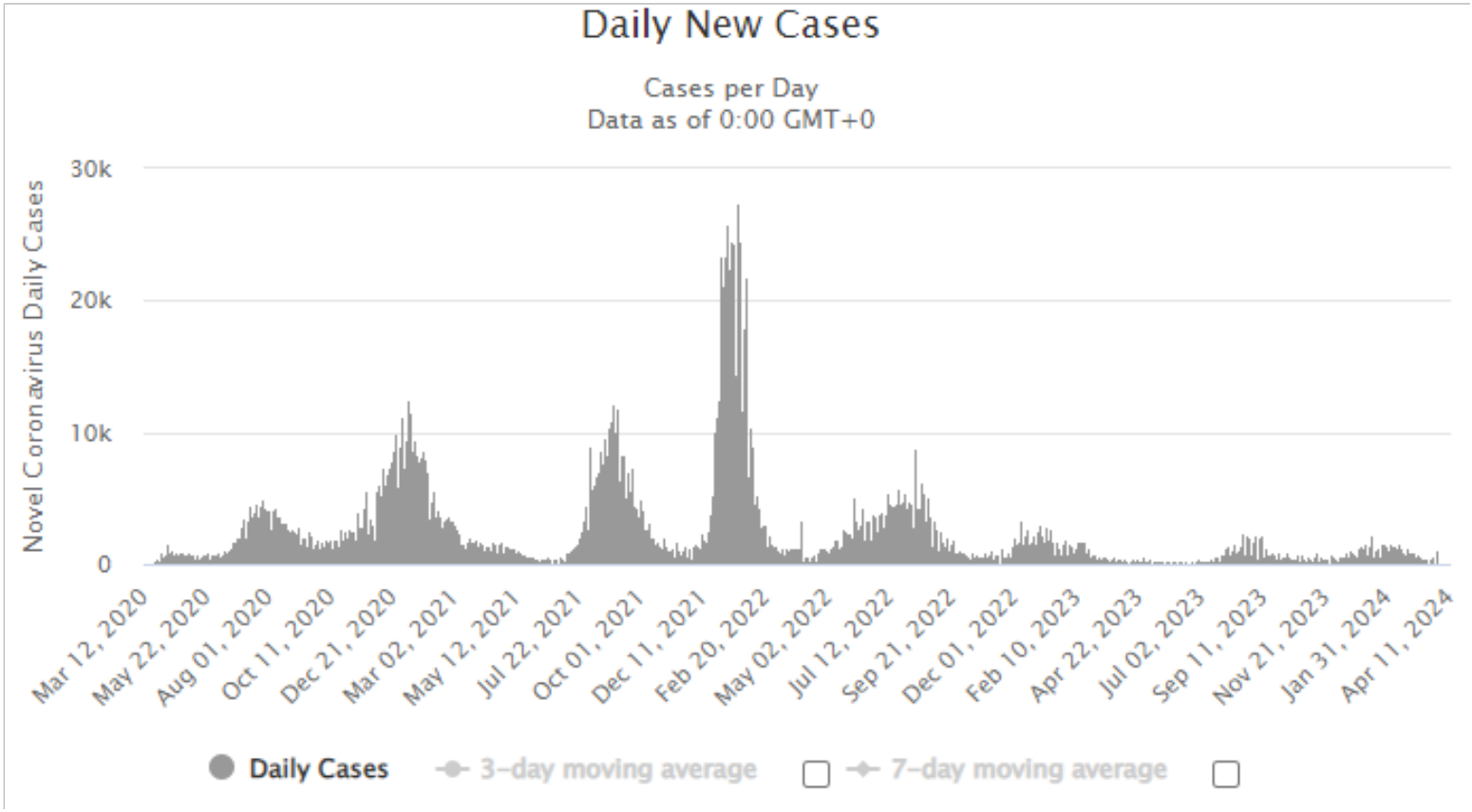

Figure 3 Daily New Cases COVID-19 positive cases in state of Georgia

https://www.worldometers.info/coronavirus/usa/georgia/#graph-cases-daily

Table1. pre-COVID vs during COVID Peak Time Series Analysis

	Month	Week	During COVID (2020-2021)	Pre-COVID (2019-2020)
Staff Responsiveness				
	June	3rd week	78.25	76.08
	May	3rd week	71.22	66.42
	May	1st week	71.05	56.03
Rating of the hospital				
	June	3rd Week	78.71	79.89
	February	1st Week	77.09	60.72
	May	1st Week	75.96	55.73
Likelihood to Recommend				
	June	3rd Week	83.41	80.70
	November	1st week	76.74	71.98
	March	5th week	75.43	75.10

We observed, by comparing the 3 highest peaks during the pandemic to pre-pandemic levels, that responsiveness, rating of the hospital, and likelihood to recommend, shown in **Table 1**, declined over time. A closer look shows that staff responsiveness at first increased due to the demands of the pandemic but declined later. Hospital rating and likelihood to recommend also followed the same pattern, with some fluctuations, but declined later as well. The peaks of surges shown in **Figure 3.,** approximately July 23, 2020, and January 8th, 2021, coincide with hospital rating and likelihood to recommend scores declining.

Table 2. Staff Responsiveness – Pandemic Troughs Time Series Analysis

	Month	Week	During COVID (2020-2021)	Pre-COVID (2019-2020)
Staff Responsiveness				
	April	3rd week	44.31	48.99
	October	1st week	47.56	70.95
	August	3rd week	49.12	75.54
Rating of the hospital				
	December	3rd week	36.34	72.14
	May	2nd week	50.51	63.89
	July	1st week	52.40	67.38
Likelihood to Recommend				
	December	3rd week	35.74	68.20
	December	1st week	48.66	63.41
	September	1st week	48.84	79.61

We also compared the 3 lowest scores during the pandemic to pre-pandemic levels and observed similar outcomes. The data in Table 2 shows that staff responsiveness, hospital rating, and likelihood to recommend declined during the pandemic compared to pre-pandemic levels. When we did a more in-depth observation, we identified that the troughs were more apparent during the first and second surges in **Figure 3**. The peaks of surges in new cases align with the low scores we see in staff responsiveness, hospital rating**,** and likelihood to recommend.

We also examine the relationship and strength of the relation between staff responsiveness, the rating of the hospital, and the likelihood to recommend. We did this by conducting a regression analysis of the pre-pandemic and during-pandemic data. Overall, the time series analysis shows that the pandemic's was significant to the hospital's operation and staff responsiveness. Early in the pandemic, responsiveness scores were high. This can be attributed to the staff's adaptability

in a crisis, known as collective resilience, the ability of a team to adapt and work together to cope with crises in hard times. (Liu, Yu, Xu, Zhao, and Guo, 2022). Furthermore, hospital administrators hired more to combat the growing strain. However, the pandemic's ongoing pressure led to declining staff responsiveness, hospital rating, and likelihood to recommend due to staff burnout. When we look at the daily new cases of COVID, we see that the troughs in staff responsiveness, hospital rating, and likelihood to recommend coincide with the peak surges. This shows that hospital staff and resources were most strained during this time.

Table 3.

Pre-COVID Staff Responsiveness & Rate the Hospital Regression Analysis

Regression Statistics	
Multiple R	0.439445501
R Square	0.193112348
Adjusted R Square	0.176974595
Standard Error	6.714033258
Observations	52

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	539.4285852	539.4285852	11.96649546	0.001116465
Residual	50	2253.912129	45.07824258		
Total	51	2793.340714			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	42.41432044	7.141669882	5.93899202	2.72245E-07	28.06985432	56.75878656
Staff Responsiveness	0.377666817	0.109175537	3.459262271	0.001116465	0.158381297	0.596952337

Table 4.

Pre-COVID Staff Responsiveness & Likelihood to Recommend Regression Analysis

Regression Statistics	
Multiple R	0.344940373
R Square	0.118983861
Adjusted R Square	0.101363538
Standard Error	6.931918313
Observations	52

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	324.474872	324.474872	6.752649333	0.012268725
Residual	50	2402.574575	48.0514915		
Total	51	2727.049447			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	50.72522896	7.373432681	6.879459155	9.26482E-09	35.91525356	65.53520435
Staff Responsiveness	0.292908776	0.112718522	2.598586026	0.012268725	0.066506962	0.519310591

Table 5.

COVID Staff Responsiveness and Rate the Hospital Regression Analysis

Regression Statistics	
Multiple R	0.52920761
R Square	0.280060695
Adjusted R Square	0.265661909
Standard Error	6.553289446
Observations	52

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	835.3048107	835.3048107	19.450299	5.49138E-05
Residual	50	2147.280128	42.94560256		
Total	51	2982.584939			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	27.44242492	8.321176717	3.29790195	0.001798473	10.7288496	44.15600024
Responsiveness of Staff	0.609614537	0.138226774	4.410249313	5.49138E-05	0.33197789	0.887251184

Table 6.

COVID Staff Responsiveness and Likelihood to Recommend Regression Analysis

Regression Statistics	
Multiple R	0.52920761
R Square	0.280060695
Adjusted R Square	0.265661909
Standard Error	6.553289446
Observations	52

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	835.3048107	835.3048107	19.450299	5.49138E-05
Residual	50	2147.280128	42.94560256		
Total	51	2982.584939			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	27.44242492	8.321176717	3.29790195	0.001798473	10.7288496	44.15600024
Responsiveness of Staff	0.609614537	0.138226774	4.410249313	5.49138E-05	0.33197789	0.887251184

Based on the results of the analysis we see that there is a statistically significant and positive relationship between relationship between staff responsiveness, rating of the hospital and likelihood to recommend, both before the pandemic, **Table 3** and **Table 4**, and during the pandemic **Table 5** and **Table 6**. The analysis additionally shows that staff responsiveness is a significant predictor of the rating of the hospital and the likelihood to recommend. The pandemic, however, amplified the importance of staff responsiveness in influencing patients' experience. This is exhibited in the increase in the correlation strengths which shows that during a crisis staff responsiveness should be made a priority during times of crisis such as a pandemic.

LESSONS FOR PRACTICE

The responsiveness of staff is essential to the patients' satisfaction, especially in times of crisis. The patients' experience is crucial for their rating of the hospital and the likelihood to recommend the hospital to their friends and family. To provide safe, quality care, healthcare managers and executives must prioritize patient-centered care to improve the patient's overall experience, particularly during a pandemic. To meet the demands of the next pandemic, hospitals must have a disaster plan in place that is geared toward patient experience. This entails having an emergency pool of clinical employees ready to meet increased patient census, managing the patients' expectations by creating policies that effectively communicate patient dissatisfiers such as visitation, and continuous monitoring and improvement of patient experience for more proactive vs reactive strategies.

CONTRIBUTIONS TO THEORY

This study builds upon the existing theory of SERVQUAL, confirming that responsiveness is a key factor in service quality, specifically in times of crisis. Additionally, by examining staff

adaptability during the pandemic's early stages, the study underscores the importance of employees' collective resilience. It builds upon extant theory by confirming its importance in healthcare while highlighting its impact on patient satisfaction and staff responsiveness.

STUDY LIMITATIONS and FUTURE RESEARCH

This study presented some limitations. The data used in this study represents only patients of two hospitals in the city of Atlanta, Ga. Future study should focus on expanding geography and sample size to include hospitals from multiple states or regions to increase generalizability. Additionally, while this study utilize quantitative analyses to determine the relationships, quantitative data does not capture the nuances of human behavior, therefor future study should focus on qualitative analysis such a patient and family interviews to obtain meaning, interpretation, and context to gain better understanding of their experience.

KEYWORDS

Patient Experience, Staff Responsiveness, Likelihood to Recommend, Rating of the Hospital, Collective Resilience, COVID-19 Pandemic,

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APPENDIX ON METHODS

The patient experience data we used to analyze staff responsiveness, hospital rating, and likelihood to recommend were collected from adults discharged from the inpatient units of two metro Atlanta hospitals. We used the Hospital Consumers Assessment for Healthcare Providers (H-CAHPS) survey, an assessment used to measure patient experience (the core survey questions are below). The study covered a period of 104 weeks, 52 weeks prior to the first reported COVID-19 case in Georgia on March 2, 2020, and 52 weeks thereafter. We used this timeline to capture any patient experience changes that are accredited to the pandemic.

First, we created a line graph using the patient experience data for a time series analysis. The time series analysis compares the weekly pre-COVID and during-COVID patient experience scores to understand the trends and patterns. To control for seasonal or periodic factors, we analyzed the data by comparing relative weeks where we saw high and low points.

Next, we ran a correlation analysis to measure the strength and direction of the relationship between our key variables: staff responsiveness, hospital rating, and likelihood to recommend. A

correlation analysis shows us if there is a connection between staff responsiveness, the rating of the hospital, and the likelihood to recommend, how strong the connection is, and what direction the relationship is positive (if one goes up, so does the other) or negative (if one goes up the other comes down).

HCAHPS CORE SURVEY QUESTION

Survey Questions	
	Individual Item
Cleanliness	• During this hospital stay, how often were your room and bathroom kept clean?
Quietness	• During this hospital stay, how often was the area around your room quiet at night?
	Composite Measures
Doctor Communication	• During this stay, did doctors treat you with courtesy and respect? • During this hospital stay, how often did doctors listen carefully to you? • During this hospital stay, how often did doctors explain things in a way you could understand?
Nurse Communication	• During this stay, did nurses treat you with courtesy and respect? • During this hospital stay, how often did nurses listen carefully to you? • During this hospital stay, how often did nurses explain things in a way you could understand?
Staff Responsiveness	• During this hospital stay, after you pressed the call button, how often did you get help as soon as you wanted? • How often did you get help in getting to the bathroom or in using a bedpan as soon as you wanted?
	Global Item
Overall hospital	• 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?
Recommend Hospital	• Would you recommend this hospital to your friends and family?