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What can COVID-19 teach us about patient satisfaction in the emergency department? A mixed-methods approach

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Abstract

Objective: The current study explored improved patient satisfaction scores at a single emergency department (ED) during the early phase of the COVID-19 pandemic (March to May 2020).

Methods: A mixed-methods design, integrating qualitative and quantitative data analyses, was employed to explore a total of 289 patient satisfaction survey ratings and 421 comments based on care that took place in the ED during the initial phase of the COVID-19 epidemic. This allowed for comparisons to a more typical time period in the ED along with the emergence of novel categories of influence.

Results: The ED census was 31% lower during 2020 (COVID-19) than the previous year, and a significantly greater percentage of patients in 2020 indicated that they would "definitely recommend" the ED compared with 2019. Wait time was mentioned in >40% of dissatisfied patient comments in 2019 but <20% of dissatisfied patient comments in 2020. General negative comments were proportionately greater than general positive comments in 2019, whereas in 2020 the reverse pattern held. Other categories did not differ significantly across 2019 and 2020.

Conclusions: The general circumstances surrounding the early stages of the COVID-19 pandemic included a lower census in the ED and higher reported satisfaction among patients. A comparison of the content of patient comments revealed less concern about wait times and a more positive overall view toward receiving care during the first 3 months of the pandemic.

KEYWORDS
COVID-19, pandemic, patient satisfaction, emergency department, wait times, communication, qualitative

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1 | INTRODUCTION

1.1 | Background

Patient satisfaction in the emergency department (ED) has been associated positively with patient compliance[1] and negatively associated with burnout on the part of ED staff[2] as well as being considered an indicator of quality of care and a factor in pay-for-performance models.[1,3] Factors associated with patient satisfaction in the ED have been relatively consistent during the past 2 decades, falling into the following broad categories: (1) interpersonal skills and attitude of staff (eg, courtesy, caring, concern, respect), (2) communication or providing explanations and information to patients (eg, providing instructions at discharge or explaining test results or the cause of a patients symptoms), (3) wait times, and (4) perceived standards of care.[4,5] Other studies have had similar findings[6,7] and have added factors related to the environment of the ED (eg, cleanliness, privacy).[8,9]

King et al. recently linked overcrowding in the ED to lower patient satisfaction.[10] Although during the early stages of COVID-19 pandemic (March to May 2020), some hospitals in New York City (NYC) were overrun with patients, some EDs saw a decrease in patients likely due to a combination of patients with non-COVID-19–related concerns staying away from the hospital, a decrease in ED visit drivers (eg, decreases in communicable diseases and motor vehicle collisions due to adherence to masking/distancing measures and stay-at-home orders), and rapid adjustments to outpatient practice patterns, including expanded availability of telehealth and clinical call centers. Thus, paradoxically, some EDs in the New York metro area may have seen fewer patients during the early COVID-19 surge than during more typical times.[11]

1.2 | Importance

This study addresses the following 2 important concepts in emergency medicine: COVID-19 and its potential effects on patient satisfaction. The current study was prompted by a review of Press Ganey patient satisfaction surveys that revealed an improvement in overall ratings during first wave of COVID-19 (March to May 2020) in 1 ED in a suburb of NYC. This begged the following questions: What contributed to improvement in patient satisfaction during the early COVID-19 surge, and what can we learn from this going forward?

1.3 | Goals of this investigation

Consistent with the uncertainty of the early pandemic, the approach to analyzing patient satisfaction during the advent of COVID-19 must be one of allowing for the unknown. A simple review of pre-COVID-19 Likert-scale ratings might miss important factors that previous research and assessment instruments had no basis to consider.[12] A qualitative approach to analyzing patient comments on the Press Ganey survey would allow for the discovery of novel contributors to

> **The Bottom Line**
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> The COVID-19 pandemic brought many unknowns, including the impact on emergency department patient satisfaction. Using a combination of quantitative (Press Ganey) and qualitative data, the authors found improved satisfaction scores based on the redirection of emphasis from wait times to gratitude for care.

(and detractors from) patient satisfaction as identified in patients' own words and based on their own experiences.[12] This qualitative exploration was followed with a descriptive analysis of the proportion of comments in various categories. The findings of the 2 methods were integrated to determine the meaning and potential implications of the differences and similarities across 2019 and 2020 and across satisfied and dissatisfied patients.

2 | METHODS

2.1 | Study design

This study protocol was approved by the Institutional Review Board of the Northwell Health System. A parallel mixed-methods design integrating qualitative and quantitative data were employed to compare Press Ganey survey comments from March 1 (first reported case in NYC on February 29) to May 27, 2020 dates of service (date of phase 1 reopening for the Suffolk County, in which this ED was located) to the same dates in 2019. This time represented the start of the COVID-19 surge in the NYC area with the end of May and the reopening representing what was (expected to be) a gradual return to normalcy. Although hospitals and health systems continued to struggle for at least a year after this, this early period differed in its sense of uncertainty and panic. The NY metro area was termed the "epicenter" for the United States with citizens and medical personnel unsure of the mode of transmission and most effective treatments.[13,14]

The Press Ganey self-report survey at the institution in the current study was sent to ≈30% of patients discharged from the ED via postal mail within 1 to 2 weeks of their ED visit, and the remainder of patients received an email with a link to a survey to their email on file. Surveys were not sent to patients who were admitted, transferred, left without being evaluated, or who died in the ED.

2.2 | Setting

Press Ganey ratings were based on care provided in the ED at a single, 78,000 annual visit academic tertiary care center in a suburb of NYC during the early phase of the COVID-19 pandemic. The hospital is 1 of 11 hospitals serving Suffolk County, NY, which had a total population of 1.493 million per the US 2010 census. This hospital is a

member hospital of the largest health system in New York state, containing 22 hospitals and 18 EDs in and surrounding NYC. The hospital serves a diverse patient population in the western portion of Suffolk County. Of the population surrounding the hospital, 42% speak a language other than English at home, with Spanish at 36.5%, Creole at 1.7%, and Urdu at 0.5% rounding out the top 3. The ED patient demographics include the following: (1) 53% female; (2) 87% adult and 13% pediatric (18 years of age and younger); (3) ethno/racial categories were 36% Latinx, 16% Black, 44% White, 1%Asian, and 3% Other; (4) patient insurer mix was 27% Medicare, 28% private/health maintenance organization, 30% Medicaid, and 15% self-pay; and (5) 21% with limited English proficiency preferred to discuss medical care in a language other than English (Spanish, 17.2%; Creole, 0.7%; Urdu, 0.2%; and Other, 2.9%).

The ED at the study hospital has a 74% discharge, 20% admit, and 1% transfer rates. The NYC regional hospitals with EDs in the same health system as the study site boast 66.33% discharge, 29.33% admit, and 1% transfer rates in the >70,000 visit cohort; 74% discharge, 23.6% admit, and 1% transfer rates in the 30,000–70,000 cohort; and 73% discharge, 19.75% admit, and 1% transfer rates in the <30,000 visit cohort.

During the acute COVID-19 surge in the NYC region from March to May 2020, the study site experienced a surge of patients with COVID-19 similar to many of the surrounding hospitals. Fortunately, supply chains for personal protective equipment, ventilators, oxygen, and other items necessary for the care of patients with COVID-19 were not significantly disrupted. Despite a rapid pivot to a treating predominantly patients with COVID-19 symptoms, we had very few clinicians who developed COVID-19 symptoms, allowing us to maintain a consistent workforce.

The demographics of the patients who returned surveys at the study site during the 2020 study period were the following: (1) female 55% and male 45%; (2) average age of 51 years (SD 21); and (3) languages of the returned surveys were 80% English, 18% Spanish, and 2% other. The demographics of the comparison group at the study site in 2019 were the following: (1) female 63% and male 37%; (2) average age of 51 years (SD 23); and (3) languages of the returned surveys were 86% English, 13% Spanish, and 1% other. The demographics of the patients returning Press Ganey surveys from the other NYC-area EDs affiliated with the study site during the study period in 2020 were the following: (1) female 53%, male 43%, and other 4%; (2) average age of 53 years (SD 20); and (3) languages of the returned surveys were 70% English, 6% Spanish, and 24% other. The demographics of the patients returning Press Ganey surveys from affiliated EDs in the comparative group in 2019 were the following: (1) female 58%, male 39%, and other 3%; (2) average age of 52 years (SD 24); and (3) languages of the returned surveys were 76% English, 3% Spanish, and 21% other.

2.3 | Survey instrument

The patient satisfaction survey is a 4-page, 50-item instrument designed to elicit feedback from the patient regarding the various factors of the visit that impacted the patient experience. The responses are recorded in a multiple-choice format, with 2–10 answers each, for example, Likert scale and yes/no, with opportunities for written prose at the end of the survey. The questions were all standardized for patients at this study site. The survey questions are grouped into the following 8 subheadings: (1) going to the ED, (2) during your ED visit, (3) people who took care of you, (4) leaving the ED, (5) overall experience, (6) your health care, (7) about you, and (8) additional feedback about your visit. The survey is distributed in the patient's preferred language for communication as obtained at the time of ED registration. The patient experience study question was based on the Press Ganey survey item asking, "Would you recommend this emergency room to your friends and family?" with the following possible choices: "definitely recommend," "probably recommend," "probably not recommend," and "definitely not recommend." The "top box" score is used and represents the percentage of respondents who gave the highest response possible on the survey scale, for example, "definitely recommend." The survey included several more granular Likert scale ratings (not analyzed in the current study) as well as an opportunity for more open-ended patient responses, which were the focus of the current study. These open-ended, free-text, or written questions were the following: (1) is there any caregiver you would like to recognize for the excellent care he or she provided during your visit; (2) describe 1 experience you appreciated during your visit; and (3) please indicate suggestions about how we could improve your care and experience at this facility.

2.4 | Assignment of comments to categories

Of the 5 authors, 4 took part in a directed content analysis using the following 5 predetermined broad categories identified in the extant literature on patient satisfaction in the ED:[4–10] (1) communication, (2) staff attitude, (3) wait time/efficiency, (4) level of care, and (5) ED environment. Individual comments were categorized into all appropriate categories (eg, the comment "I was in and out so quickly and every person was so concerned and polite" was categorized as a comment about wait time as well as staff attitude). Some comments fit into just 1 category, whereas others were coded into as many as 4 categories. However, a small number of items arose that did not appear to fit into predetermined categories. When 10 or more comments that did not fit in predetermined categories were agreed to represent some additional concept, another category was created. Consequently, 2 additional categories ("specific staff" and "general positive or negative comment") were added for a total of 7 categories compared across 2019 and 2020. An eighth category, "covid-19 specific," was created for 2020 comments.

Two of the authors (M.O.G. and M.F.) independently categorized all comments, followed by a discussion session to reach preliminary consensus on the category coding for each item. Next, physician authors (S.G. and E.S.C.) independently categorized comments from 2020 and 2019, respectively. Again, discussions took place until consensus was reached on all comments. At a final meeting, E.B. (a first-year
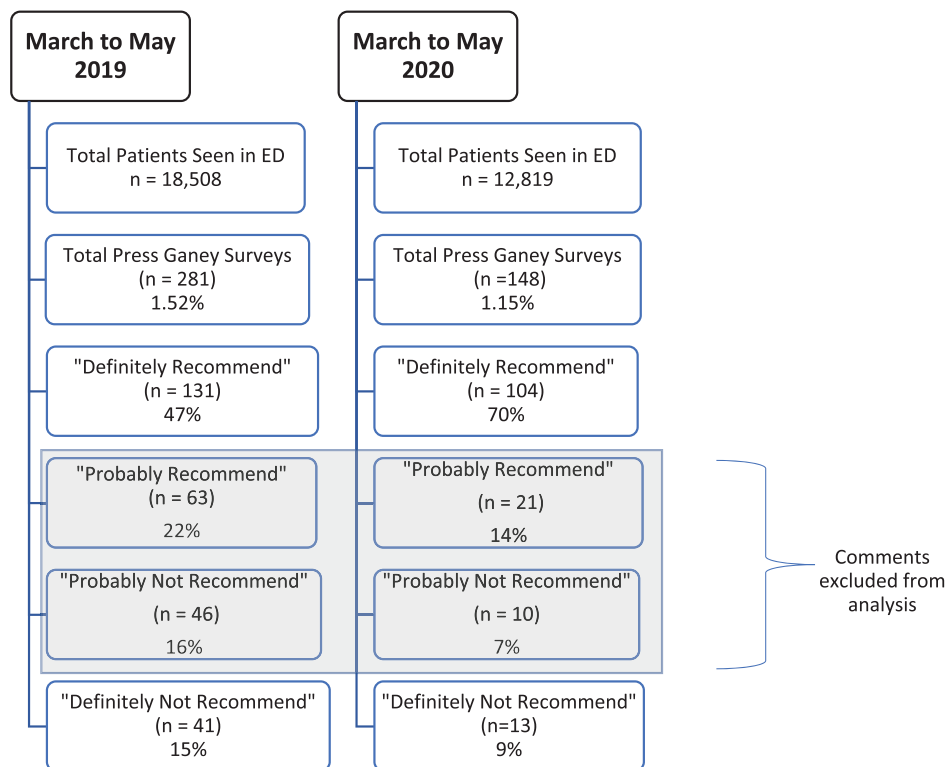
FIGURE 1 Comparison of 2019 and 2020: total patients treated in the emergency department (ED), completed Press Ganey surveys, and likelihood to recommend ED rating totals

emergency resident) joined the other 4 authors for discussions of any items that were discrepant across the physicians and non-physicians. Although E.B. had not participated in the initial independent categorizations, her input provided additional perspective. In sum, each patient comment was independently read and categorized by 3 of the 4 authors (with at least 1 physician independently categorizing each comment). Discussion sessions to reconcile discrepant items and assure interrater agreement were held at 2 stages and involved all 5 authors in the final stage.

2.5 | Quantitative analysis

The frequencies of comments across the 8 categories (staff attitude, level of care, wait time, specific staff, communication, general positive or negative, ED environment, and COVID-19 specific) were tabulated for surveys with the responses "definitely recommend" and "definitely not recommend" for 2019 and 2020. Comments from respondents who indicated "probably recommend" or "probably not recommend" were not analyzed as it was felt that clear satisfaction or dissatisfaction could not be established based on these probable responses (see Figure 1).

Because of the categorical nature of the quantitative data, nonparametric tests were used to compare the breakdown between "definitely recommend" and "definitely not recommend" from 2019 to 2020. Chi square tests were used to compare the overall number of

surveys across 2019 and 2020 in the "definitely recommend" and "definitely not recommend" groups. For 7 of the 8 smaller individual categories (excluding the eighth category, "COVID-19 specific"), Fisher's exact tests (a substitute for chi square when cell sizes are <5) compared 2019 and 2020.[15]

3 | RESULTS

3.1 | Quantitative analysis: overall satisfaction

As shown in Figure 1, the total ED patient census was 31% lower for the 3 months of 2020 (the COVID-19 surge) than the same 3 months in 2019. Press Ganey surveys were available for 281 patients in 2019 and for 148 patients in 2020 (sampling 1.52% and 1.15% of total patients, respectively). As noted previously, surveys with rating of "definitely recommend" and "definitely not recommend" were selected for analysis, bringing the total number of surveys reviewed to 289. In addition to fewer patients treated in the ED in 2020, those patients were more likely to indicate that they would "definitely recommend" (subsequently referred to as "satisfied patients") the ED (47% in 2019 vs 70% in 2020) and less likely to indicate they would "definitely not recommend" (subsequently referred to as "dissatisfied patients") the ED (15% in 2019 vs 9% in 2020). This difference across 2019 and 2020 was statistically significant ($\chi^2 = 7.422, P = 0.006$).

TABLE 1 Patient satisfaction category frequencies, percentages, totals and comparison statistics

	2019 Definitely would recommend	2020 Definitely would recommend	2019 Definitely would not recommend	2020 Definitely would not recommend	Total	Chi square statistic
Number of patient surveys	131	104	41	13	289	7.422**
Total number of comments analyzed, n[a]	185	171	49	16	421	
					Total comments for category	Fisher's exact statistic[c]
Comment category[b]						
Staff attitude	87/47%[d]	83/49%[d]	13/27%[d]	14/88%[d]	197	0.837
Specific staff	51/28%[d]	36/21%[d]	1/2%[d]	0/0%[d]	88	1.000
General positive or negative comment*	27/15%[d]	34/20%[d]	11/22%[d]	1/6%[d]	73	0.003**
Perceived level of care	27/15%[d]	13/8%[d]	17/35%[d]	7/44%[d]	64	1.000
Communication	24/13%[d]	7/15%[d]	25/14%[d]	6/38%[d]	62	1.000
Wait time*	20/11%[d]	14/8%[d]	20/41%[d]	3/19%[d]	57	0.038*
ED environment	13/7%[d]	6/4%[d]	3/6%[d]	0/0%[d]	22	0.533
COVID-19 specific		20/12%[d]		4/25%[d]	24	

[a]Some surveys included >1 comment.
[b]Frequencies may total greater than the number of comments analyzed as some comments fit into multiple categories.
[c]Fisher's statistic is the same as the P value because it is exact rather than an estimate; it is used in place of chi square when several cell frequencies are <5.
[d]Slashed data are n/%
*Significant at $P < 0.05$.
**Significant at $P < 0.01$.

3.2 | Quantitative comparison of qualitatively developed categories across 2019 and 2020

Qualitative and quantitative findings are presented in an integrated fashion. Although not all quantitative comparisons were statistically significant, qualitative description still yielded important information about potential differences across the early COVID-19 surge and the same time period the prior year. Frequency totals for the 7 categories shared across 2019 and 2020 surveys as well as for the eighth category ("COVID-19 specific" from the 2020 surveys only) are presented in Table 1 and are demonstrated graphically in Figure 2. Table 1 also includes the results of the Fisher's exact tests to determine whether frequencies in each of the 7 comparable categories were significantly different across 2019 and 2020. The 2 categories that reached statistical significance were general positive or negative comment and wait time. Table 2 provides detailed examples of directly quoted comments in the 8 categories related to patient satisfaction. They are discussed next in a descending order of total comments per category.

3.2.1 | Staff attitude

The greatest number of overall comments related to this category. For satisfied patients, comments emphasized empathy and attentiveness and for dissatisfied patients, rude treatment, and inattentiveness. In viewing the pattern of percentage of comments relating to staff attitude, it would seem that there are a much greater percentage of staff attitude comments in dissatisfied 2020 patients; however, this appears to be an artifact of the small number of comments in the 2020 dissat-

isfied patient group (only 16 comments) as the difference was not statistically significant. Nevertheless, it is important to note that 88% of comments from dissatisfied patients during COVID-19 reflected staff attitude in their comments.

3.2.2 | Staff

This was not a predetermined category and was derived from the open-ended survey question, "Is there any caregiver you would like to recognize for the excellent care he or she provided during your visit?" We noted several specific mentions by name or caregiver role description and determined a need for this additional category.

Comparison in this category did not reach statistical significance, and it is important to note that this category was not mentioned by any dissatisfied patients in 2020 and in only 1 patient comment in 2019. However, specific staff were noted in the comments of 28% of satisfied patients in 2019 and more than one fifth of satisfied patients in 2020.

3.2.3 | General positive or negative comments

This category was added to capture comments that did not provide a clear description of what was exceptional or poor such as "Everyone was excellent!" or "Terrible experience." Patterns were opposite across the 2 years at a statistically significantly level (Fisher's exact $P = 0.003$). In 2019, general negative comments were proportionately greater than general positive comments, whereas 2020, general positive comments were a greater proportion.
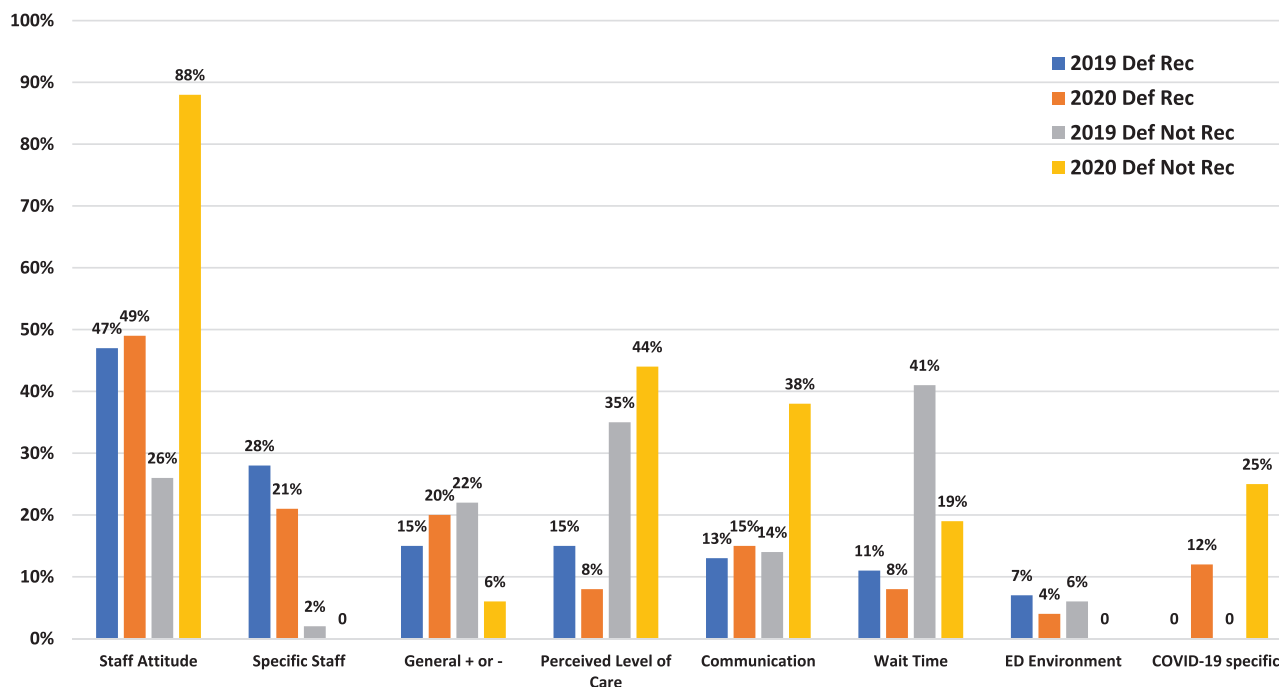
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FIGURE 2 Percentage in each comment category across 2019 and 2020 for patients who would definitely recommend and definitely not recommend the ED. Def Rec, definitely recommend; Def Not Rec, definitely not recommend; ED, emergency department

3.2.4 | Perceived level of care

For satisfied patients, this category involved staff taking an informed approach or demonstrating knowledge or skill. For dissatisfied patients, comments involved feeling that they did not receive appropriate treatment (e.g., were not given the medication they felt should have been prescribed or did not feel appropriate tests were run). Across both 2019 and 2020, this issue figured more in the comments of dissatisfied patients (35% and 44%, respectively) than satisfied patients (15% and 8%, respectively), and the comparison across years was not statistically significant.

3.2.5 | Communication

When noted by satisfied patients, this comment category involved explanations given by physicians and medical staff as well as patients feeling that they were listened to and that they and their families were kept updated about their care. Dissatisfied patient comments in this category generally involved feeling ill informed or dismissed/not listened to. Feeling "listened to" in this category contrasted with "attentiveness" in the staff attitude category; attentiveness involved an act of doing (eg, bringing or providing), whereas, listening involved allowing the patient to speak and demonstrating that the patient had been heard or understood. Similar to the other categories noted previously, the percentages might suggest that communication was a significant issue for dissatisfied patients in 2020, but this did not reach statistical significance.

3.2.6 | Wait time

Comments of satisfied patients in this category involved waiting less than expected or references to efficiency. Dissatisfied patient comments referenced long waits to be seen. There was a statistically significant difference in this category as it was mentioned in >40% of dissatisfied patient comments in 2019 but <20% of dissatisfied patient comments in 2020 (Fisher's exact $P = 0.038$). For satisfied patients across both years, it did not seem to factor greatly (11% in 2019 and 8% in 2020).

3.2.7 | ED environment

The team had initially considered a separate category of "crowding/privacy," but found so few of these comments (4 in total) that this was subsumed under the general ED environment. Comments in this domain ranged from physical aspects of the ED space to the more general milieu (eg, music, refreshments, cleanliness) of the ED. Similar to the specific staff category, this category was not mentioned by any dissatisfied patients in 2020.

3.2.8 | COVID-19 specific

This final (understandably 2020 only) category was composed of comments that referred to words including "COVID," "COVID-19," "corona," "coronavirus," "the virus," and "the pandemic." Other less

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TABLE 2 Exemplars of positive and negative comments in individual patient satisfaction categories

Comment category	Positive	Negative
Staff attitude	"As I was eating my lunch, a staff member who was sweeping the floor, leaned his broom against the wall and went into another cubicle and brought me a tray on wheels, so I could place my tray on it… he was very considerate since I had my food tray on the bed. I had told the nurse it was fine, but it really wasn't and I did not want to bother her again. He saw something he could fix, didn't ask questions and fixed it."	"When you push the button for a nurse and you see them all sitting and laughing with each other instead of working."
Communication	"The doctor who explained my results/diagnosis to me told me in a way I could understand."	"Listen to the client and/or caregiver who is actually experiencing the problem that brought them in… after all there must have been a significant reason that person felt warranted an emergency room visit at that time of night."
Wait time	"Nurse in ER was quick to get my test results so that I could be discharged quickly and safely."	"I waited 5 hours without food or water. I left the hospital after this and went home. Not acceptable."
ED environment	"The area in the emergency room where I was taken for IV drip was incredible! Reclining seating, privacy, and an iPad!"	"The door to the bathroom should be made wider… I had to use the bathroom frequently. Since I didn't bring my walker and couldn't maneuver a wheelchair (door needs widening and door jamb needs to be level with the floor) I had to rely on staff to take me back and forth."
Specific staff	"Dr. [X] came across as a very kind & compassionate human being, and a good doctor as well."	"Dr. [X] come in the room and told my child he was caring for people who were near death and he had 100 patients. My daughter was so upset."
Perceived level of care	"The doctor considered different explanations for my symptoms based on a discussion we had about my medical history and took steps to rule them out: A very scientific approach."	"Don't suggest that I don't need anything when my blood pressure was way above normal and my primary doctor sent me to the ER."
General positive or negative comment	"I couldn't ask for better."	"Emergency room caregivers were all terrible."
COVID-19 specific (2020 only)	"We appreciate EVERYTHING that was done at the time of the visit. We know what a difficult time it is for everyone now."	"I was sent to ER by (another doctor) for COVID-19 but no check swab test or blood test and told me I have COVID-19?"

pointed comments such as "stay safe" or "healthcare heroes," although not specifically denoting COVID-19, were interpreted to be related to the pandemic, and they appeared to become part of the vernacular related to the pandemic.[16]

Although there was no opportunity for quantitative statistical comparison, examination of comments in this category may provide perspective and lend to theories of interpretation for some of the differences between 2019 and 2020. At the very least, they provide an interesting snapshot of what patients found significant about their experience in the ED at the start of the COVID-19 pandemic in the NY metro area.

Patients expressed understanding and gratitude in the context of the pandemic, with comments such as "I did have to wait a while before I went for my CAT scan. But I understand that the hospital was very busy due to COVID-19. The important thing was that they were able to relieve my pain. Thank you for that" and "Keep it up, especially considering all that hospitals are experiencing with COVID-19; I appreciated just being seen."

Alternatively, the scarcity of COVID-19 testing in early March also resulted in some negative comments related to the pandemic: "When I went in there, they never tested me for nothing. No coronavirus, no flu.

Very disappointed" and "The nurse who provided medication seemed driven by fear as she never walked inside the door in my room and only provided medication and paperwork when the doctor was in. Think of how this makes a patient feel in a time of crisis."

4 | LIMITATIONS

One of the main limitations of this study also can be considered (from the perspective of the facility) a success—the fact that there were such a small number of dissatisfied patients in 2020. It is difficult to generalize based on such a small group of patient comments. However, a qualitative approach allowed concerns to be recognized that might not have been apparent based solely on quantitative ratings. It is also important to add that generalizability is hindered by the fact that ratings come from a single facility that experienced the COVID-19 pandemic in a particular way during March through May 2020.

Several aspects related to the nature of the Press Ganey survey process may limit the applicability of findings. First, Press Ganey response rates are generally low (as they were in the current study). For example, a national emergency medicine group covering

42 facilities demonstrated an average facility response rate of 3.6% to 16.0% across 6 months.[17] Second, the Press Ganey survey does not represent patients who were transferred to another facility or who were not admitted to the inpatient setting, and it is, therefore, representative of relatively low acuity patients. Third, the email or postal versions of the Press Ganey survey were sent out 1 to 2 weeks after the patients' ED visit, which, compared with an immediate survey, may reduce the accuracy of the recall of the visit. Lastly, the issue of non-response bias on the Press Ganey survey has been raised in the existing literature.[18]

In addition, although the combination of quantitative and qualitative data strengthens conclusions, the form of the qualitative data consisted of relatively short responses to open-ended items that did not offer an opportunity for follow-up questions or clarification. In several cases, rather than risk overinterpreting a relatively broad comment, the comment was relegated to the general positive or general negative category.

Lastly, an additional year of baseline data (2018) might have better established the pre-COVID-19 frequency trends. Had there been several areas of statistically significant difference, the undertaking of qualitatively categorizing and tallying 150 to 200 additional patient comments may have been warranted. However, due to the small sample size for the dissatisfied group in 2020, this likely would not have aided the process of drawing meaningful comparative conclusions.

5 | DISCUSSION

The authors had hoped to reveal precisely what contributed to improvements in patient satisfaction by integrating quantitative and qualitative data from the 2019 and 2020 Press Ganey surveys. Qualitative analysis of the comments was enlightening regarding patients' consideration of the pandemic in how they assessed (and in some cases may have overlooked) factors because of a stated understanding of the stresses of COVID-19 and their appreciation for healthcare workers during this time. However, from a quantitative perspective, the only statistically significant differences across 2019 and 2020 were in the comments categorized to the wait time and to general positive or negative comment categories.

"Wait time" was not a frequent comment category for satisfied patients in either 2019 or 2020, but among dissatisfied patients, it was mentioned twice as much 2019 than in 2020. It is possible that due to the lower census, there simply was not as much waiting in 2020 or alternatively, patients were willing to overlook this issue during COVID-19, as suggested by the content of some comments.

In 2019, the general negative comments were proportionately greater than the general positive comments, whereas in 2020, the reverse pattern held. This is likely affected by the higher level of reported patient satisfaction in 2020, but we theorize, based on comments in the "COVID-19 specific" category, that patients may have held a generally more positive view of and appreciation for receiving any care at all during the first 3 months of the pandemic.

Some patterns remained stable across 2019 and 2020. For instance, dissatisfied patients tended to comment on concerns about their perceived level of care more than satisfied patients during both years, and satisfied patients tended to name specific staff in their comments to a greater extent than dissatisfied patients in 2019 and 2020.

Across years and satisfaction levels, the ED environment did not emerge as a strong contributor to satisfaction as was expected based on the literature review. However, the ED in the current study had been renovated in 2017 with an eye toward making it comfortable and functional for patients and staff. One possibility is that the ED environment might be noticed if it was consistently poor but is less notable when its condition is adequate or better. In the same vein, there were not as many comments about crowding as expected, but the renovation involved tripling the square footage of the ED in 2017.

Review of the contents of the COVID-19–specific comments suggested, for satisfied patients, a tendency to be grateful for care and the tendency to overlook some concerns. For dissatisfied patients, the COVID-19–specific comments suggested that they might have been feeling particularly vulnerable, and a large percentage of dissatisfied patient comments related to staff attitude. It is not possible to ascertain whether this was due to patients' own apprehension affecting their interpretation of staff atittude, staff apprehension in the midst of a pandemic truly affecting staff attitude, or a combination of both. Regardless, this suggests that it is important to keep in mind that this is likely a time of heightened emotions for both healthcare workers and patients.

In summary, COVID-19 appeared to have had a positive effect on the overall level of patient satisfaction possibly due to, at least in part, a decrease in total ED census. Consistent with this, dissatisfied patients in 2020 did not note wait time as frequently as dissatisfied patients in 2019. The breakdown of patient comments revealed that many aspects remained relatively stable in their importance across 2019 and 2020. However, in 2020, patient general comments tended to be more positive. This makes intuitive sense in the context of COVID-19 specific comments that suggested an overall gratitude for care in the early stage of the pandemic. It is hoped that the COVID-19 pandemic will soon be resolved, but this information may hold potential importance for patient satisfaction going forward in unforseen times of stress and uncertainty.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

S.G. conceived of the original idea and S.G. and M.O.G collaborated to develop the analytic approach. M.O.G and M.F. designed the system to manage coding from all authors across multiple iterations and conduct quantitative analyses. M.O.G., S.G., M.F., and E.S.C. read and categorized individual patient comments and all authors discussed content categories and final results. M.O.G and S.G. took the lead in writing the manuscript with input on the final manuscript from all authors.

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