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**Patient Experience during the COVID-19 Pandemic at Smilow Cancer Hospital at
Yale-New Haven: A Mixed Methods Study**

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The Requirements for the Degree of

MASTER OF PUBLIC HEALTH

In Chronic Disease Epidemiology

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Abstract

Background: The COVID-19 pandemic has sidelined many elective, as well as non-elective, procedures designed to improve patients' care experience. Oncology patients are at higher risk of developing and dying from COVID-19 and experience greater difficulties accessing and affording healthcare, compared to patients without cancer.

Objective: To explore the trends in patient experience of outpatient oncology patients in relation to the COVID-19 pandemic.

Methods: We utilized the additional comments section of the Press Ganey survey to ask respondents (n=12,514) about their experiences utilizing care. The survey was administered after each patient visit and analyzed quarterly from January 2020 to February 2021: January 1, 2020 - February 1, 2020, April 1, 2020 - May 1, 2020, July 1, 2020 - August 1, 2020, October 1, 2020 - November 1, 2020, and January 1, 2021 - February 1, 2021. We assessed eight measures of patient satisfaction and clinical effectiveness to assess patient experience in outpatient oncology patients of the Smilow Cancer Hospital Network: overall satisfaction, professionalism, compassion, efficiency, communication, patient engagement, quality of hospital facilities and, when applicable, treatment experience during the COVID-19 pandemic.

Results: The proportion of respondents that expressed being satisfied with their experience changed significantly from January 2020 to February 2021: 75%, 79.2%, 77.4%, 76.0%, 75.1% ($p < 0.001$). The proportion of participants who reported satisfaction with pandemic-specific hospital policies declined significantly from 61.6% to 25% ($p = 0.003$) from January 2020 to February 2021. The patients at Smilow Cancer Hospital admitted to being less satisfied with the hospital facilities as well; reports of satisfaction with hospital facilities decreased from 35% to

26.5% ($p = 0.064$) from January 2020 to February 2021. Patient responses related to perception of engagement in their treatment plan fluctuated significantly over time: 75% reported feeling engaged in their treatment plan in January 2020 and in February 2021, 71.3% reported feeling engaged in their treatment plan ($p = 0.0006$). The patients at Smilow Cancer hospital expressed a slight improvement in communication after the onset of the COVID-19 pandemic ($p = 0.925$): at the first-time-point, 42.5% of respondents reported being satisfied with their communication and 52.5% reported being satisfied in February 2021.

Conclusion: This study indicated an overall upward trend in patient experience over the course of the year. As the COVID-19 pandemic stretched onward, the hospital facility adapted to maintain high levels of patient satisfaction.

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Introduction

As of March 1, 2022, coronavirus disease 2019 (COVID-19) has infected over 78.8 million people and has resulted in over 945,000 deaths.¹ In the spring of 2020, after the first cases of COVID-19 were reported in the United States, many states issued stay-at-home orders to reduce infection. COVID-19 has disrupted the way medicine is practiced in hospitals and clinics throughout the country. Health systems were forced to adapt to new care models, workflows, and reimbursement structures as the entire medical community struggled to define best practices in the midst of a pandemic. COVID-19 has sidelined many initiatives designed to improve patients' care experience, such as patient-family advisory councils, communication skills improvement initiatives, and other initiatives that support patient-centered care.

The strain on the healthcare system has negatively affected the way patients who are diagnosed and treated for cancer access and experience care. This patient population is at higher risk of developing and dying from COVID-19 and experienced greater difficulties accessing and affording healthcare as the COVID-19 crisis continues.^{2,3,4,5,6,12} 79% of patients in active treatment for cancer reported a delay in their healthcare (up from 27% prior to the pandemic). Recent data showed that in 2020, compared to 2019, outpatient cancer care clinic visits decreased by 70%, cancer screening rates decreased by 60% and enrollment in cancer clinical trials decreased by 60%.⁵ In addition to affecting access to care, the COVID-19 pandemic negatively affected the mental health of those diagnosed with cancer. Nearly 50% of cancer patients reported that having cancer during the COVID-19 pandemic affected their mental and/or emotional wellbeing.^{2,6,8} A wealth of knowledge exists regarding how the COVID-19 pandemic has affected the quality of life of these patients and their ability to access care. However, there is a gap in the literature regarding patient experience since the onset of the pandemic.

COVID-19 has abruptly disrupted cancer care and the impacts of these disruptions on patient experiences are largely understudied.⁵ Pandemic-related delays in treatment, along with social isolation from stay-at-home restrictions, and higher COVID-19 mortality risk, may have added new sources of stress and anxiety for many patients with cancer.⁵ Patient satisfaction survey data has largely diminished during the pandemic as patients, offices and health systems tackled urgent adjustments and many survey questions were less immediately relevant. Historical data shows that key drivers of positive patient experience include staff coordination of care, communication, responsiveness to patient concerns, and courtesy.³ A direct relationship between patient satisfaction, physician job satisfaction, and a decrease in malpractice claims has been observed.³ Patient perception of care also has significant downstream economic ramifications for healthcare organizations. Performance in key patient experience metrics has been shown to be predictive of patients' recommendations of hospitals and medical practices.

Smilow Cancer Hospital at Yale-New Haven, similar to more than 26,000 other healthcare organizations throughout the country, facilitates the administration of Press Ganey surveys and utilizes the reports generated by the system.⁹ Press-Ganey is the most widely used vendor in the United States for patient satisfaction surveys so there is great potential for utilization of this data for both qualitative and quantitative research on health centers throughout the country.¹⁰ However, limited analysis has been published related to the qualitative data that is routinely collected from patients. A mixed-methods analysis of the Press Ganey surveys administered through Smilow Cancer Hospital can help assess if and how the hospital network must adapt in order to best support their patient population. Thus, the purpose of this study was to explore trends in patient experience of outpatient oncology patients in relation to the COVID-19 pandemic. It was hypothesized that patient satisfaction, as expressed in the Press

Ganey comments, would decline over the course of the COVID-19 pandemic as burden on the healthcare system increased, elective services were canceled, and hospital policies were altered to accommodate social distancing.

Methods

Study Setting

This cross-sectional study assessed factors related to patient experience during the COVID-19 pandemic. The study was conducted at Smilow Cancer Hospital at Yale-New Haven, the only National Cancer Institute (NCI)-designated comprehensive cancer center in Connecticut and one of 51 centers in the nation. Smilow Cancer Hospital is Connecticut's largest provider of cancer care, treating more than 48% of the 20,000 patients diagnosed with cancer annually in the state.¹¹ Smilow Cancer Hospital has a volume of over 235,000 outpatient visits per year.¹¹ The hospital has more than 300 open clinical trials providing the most advanced cancer therapies and a wide range of specialty services such as survivorship care, social work, prevention education, tobacco treatment, integrative medicine, pain management, support groups, and exercise & nutrition support.¹¹ Press Ganey surveys are routinely sent to patients from the outpatient oncology department.

Study Recruitment

Press Ganey conducts one of the most widely used surveys to measure and compare patient feedback in the United States. Patient feedback scores for hospitals, departments, and individual providers are returned, with comparison to similar institutions. The Press Ganey survey involves administering a standardized patient experience form to patients following their healthcare visit.⁹ Press Ganey surveys are sent to eligible patients via email after outpatient visits

at Smilow Cancer Hospital. Eligible patients were seen in an outpatient setting, had not received a survey about an outpatient visit in the last 30 days, and had an email address on file at Smilow Cancer Hospital. Only 3% of patient comments meet the exclusion criteria and are not posted online in the Press Ganey database. According to the literature, response rates to Press-Ganey surveys range between 16.5% and 18% in the outpatient setting and are as low as 13.5% in surgical departments.¹⁸⁻²⁰

The Press Ganey survey consists of 10 questions about the nature of the patient visit and each question is answered on a Likert scale (very poor, poor, fair, good, and very good). The final component of the survey is an open-ended comment section.¹⁵ This study utilized the qualitative data from the comments section and analyzed trends in the comments left by patients after their outpatient oncology visits. For this study, we analyzed the comment sections of Press Ganey surveys administered between January 1, 2020 and February 1, 2021.

Data Analysis

Press Ganey comments were gathered by one investigator (DMK) and entered into an electronic data collection tool (Excel 2019 v16.0). Standardized statistical codes were created to analyze trends quarterly: January 1, 2020 - February 1, 2020, April 1, 2020 - May 1, 2020, July 1, 2020 - August 1, 2020, October 1, 2020 - November 1, 2020, and January 1, 2021 - February 1, 2021. The 12-month study duration was selected to measure potential changes in patient experience prior to onset of the COVID-19 pandemic and as the hospital adapted its policies and practices during the COVID-19 pandemic. We designed the study to reflect the real-world experiences of how a medical director might use Press Ganey qualitative data to improve patient experience.

Two researchers (DMK and SMS) coded the Press Ganey responses to the open-ended comments section asking about experiences during outpatient oncology appointments at Smilow Cancer Hospital using grounded theory. Each coder read 100 responses and then met together to define inductive codes based on constructs that emerged from the data. For example, the code “patient engagement” was applied when a patient’s knowledge, skills and ability to manage their own health were acknowledged. Following codebook development, we independently coded sets of 50 open-ended responses until we reached Cohen’s kappa > 0.80 . After each coding set, we met to compare codes and further refine the codebook. Once we achieved kappa > 0.80 , we independently coded all responses. Coders met to discuss any discrepancies until consensus was met, generating the final coded data file. Lastly, we discussed cross-code themes using thematic content analysis and reported all themes irrespective of their frequency in the data. The final themes were eight measures of patient satisfaction and clinical effectiveness: overall satisfaction, professionalism, compassion, efficiency, communication, patient engagement, quality of hospital facilities, and, when applicable, treatment experience during the COVID-19 pandemic.

Quantitative analyses were conducted in SAS 9.4 (SAS Institute Incorporated, 2013). The Chi-Square test for analysis of variance was used to describe differences in the prevalence of each code across the five time-points between January 2020 and February 2021. We considered $p < 0.05$ to be statistically significant. We used the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines for the complete and adequate reporting of observational research.¹⁴

Results

Study Sample

The study sample included 12,514 participants, which allowed us to analyze 38.1% of the 32,883 patient comments returned from January 1, 2020 to February 1, 2021. The outpatient visits represented in this study make up approximately 5.3% of the estimated 235,000 outpatient visits per year; there were no participants included with incomplete responses to the open-ended comment section.¹¹ The first time-point (January 1, 2020 - February 1, 2020) had 2,570 responses (20.5% of the sample), the second time-point (April 1, 2020 - May 1, 2020) had 1,947 responses (15.6%), the third time-point (July 1, 2020 - August 1, 2020) had 2,750 responses (22.0%), the fourth time-point (October 1, 2020 - November 1, 2020) had 2,677 responses (21.3%), and the final time-point (January 1, 2021 - February 1, 2021) had 2,570 responses (20.5%). The time-points are not repeat samples; each time-point includes a distinct sample of study participants.

Quantitative Trends in Patient Experience

This study indicated an overall upward trend in patient experience over the course of the year. The proportion of respondents that expressed being satisfied with their experience fluctuated significantly from January 2020 to one year later, February 2021: 75%, 79.2%, 77.4%, 76.0%, 75.1%, respectively ($p < 0.001$). Comments about satisfaction with COVID-19-related hospital policies and practices declined significantly across the four time points after the onset of the pandemic: 61.6%, 39.9%, 33.6%, 25.0% ($p = 0.003$). The patients at Smilow Cancer Hospital who responded to the survey also reported becoming less satisfied with the hospital facilities (e.g. parking, technological support, and overall facility cleanliness) as the pandemic stretched on: 35.0%, 43%, 42.3%, 29.8%, 26.5% ($p = 0.064$).

The first time-point contained a high proportion of comments about provider compassion and this trend was consistent over time: 83.8%, 92.3%, 88.4%, 91.9%, 86.7% ($p = 0.042$). The proportion of positive patient comments about staff communication at Smilow Cancer Hospital remained relatively consistent over time as well: 42.5%, 56.9%, 58.8%, 49.7%, 52.5% ($p = 0.925$).

The proportion of positive comments about staff professionalism increased initially yet declined after May 1, 2020: 73.3%, 82.4%, 77.6%, 77.4%, 75.7% ($p = 0.051$). There was a similar trend in patient-reported experiences of hospital efficiency: 38.5%, 55.2%, 42.4%, 41.3%, 46.1% ($p = 0.521$). There was a statistically significant change in comments about patient engagement (if a patient's knowledge, skills and ability to manage their own health were acknowledged by the staff) over time. There was an initial sharp decrease after the onset of the pandemic and then a gradual increase over the remaining time-points: 75.0%, 68.2%, 74.9%, 67.7%, 71.3% ($p = 0.001$).

Qualitative Trends in Patient Experiences

Provider Qualities: Professionalism, Compassion, Patient Engagement

The Smilow Cancer Hospital employees are the patients' first touch points when entering through the hospital doors. As a result, it is no surprise that most of the qualitative themes are related to hospital staff. A high proportion (by time-point: 73.3%, 82.4%, 77.6%, 77.4%, and 75.7%, respectively) of respondents expressed that the Smilow Cancer Hospital staff was *professional* in its interactions with patients. One patient remarked:

“I was concerned about impersonal care in a large research clinical setting. Nothing could be farther from the truth. All personnel were delightful and cooperative and so far the care has been wonderful.”

Another respondent spoke to the specific traits of the physician that made them professional in the midst of a challenging appointment with their mother:

“This was a complicated and difficult session and my doctor did everything she could to make it bearable and understandable. She took her time to ensure that my mother understood all of her options and rights.”

The patients at Smilow Cancer Hospital reported that some of the most important traits in a healthcare provider were patience, knowledge, attentiveness, focus and attention to detail. Due to the seriousness of many patients’ conditions, provider *compassion* was another highly valued trait:

“My doctor is awesome. She is always so caring, thorough, and spends time with me to assure I understand my course of care. I know I am in the best hands. There are not enough words to express my gratitude.”

Cancer diagnosis and treatment can be incredibly frightening for patients. Patients expressed that understanding the details of their diagnosis and the next steps in their treatment journey is of the utmost importance. They seek a provider who understands this fact and takes the time to explain the science in lay terms. Many patients emphasized that when looking for a hospital facility, it was very important that the staff helped them to feel comfortable. Whether this was having a friendly disposition or going out of their way to ask the patients how they were doing emotionally, these extra steps went a long way.

Efficiency and Communication with Hospital Staff

While the personality traits of the providers themselves were essential in making the patients feel comfortable at Smilow, the patients also emphasized the importance of good *communication*. One patient raved:

“My physician is outstanding. He is a great communicator - direct, clear, thorough, good listener, open minded. Both his actions and his words instill confidence. I am grateful for his continuing care and continue to recommend him - without reservation - to anyone I know looking for a surgeon.”

Whether this was being able to contact their healthcare providers with questions about their treatment plan or being able to connect with office staff about scheduling an appointment, ease of communication played a large role in overall patient experience. One patient used their survey to provide constructive criticism for how to improve communication prior to each office visit:

“When asked how long my wait would be for the physician, I have never been given a realistic answer. If a physician is running late, the staff should be transparent in informing the patient. Perhaps texting the patient on our cell phone how long the wait is, would be helpful. Sitting in the waiting area for 2-3 hours or longer just causes frustration and anger.”

There was a significant amount of overlap with the *communication* and *efficiency* themes. Patients tend to equate efficient communication with good communication and poor communication with inefficiency. Patients frequently became frustrated when wait times stretched on and they did not receive updates from the hospital staff:

“Calling in to reach the patient care point person after the appointment was difficult. Twice. All calls went to a very long hold time only to have to try to leave a message, which pushed me through covid talk a second time at main switchboard then another very long hold. Solution seems to be for me to use the message system in Mychart portal rather than try to call in.”

Long wait times with the phone service were highly correlated with poor overall patient experience. Patients were also much more likely to be *unsatisfied* if their healthcare provider had delays in their schedules or were not able to spend very long with the patient. One patient remarked, “The facility is great. I just had an issue with my wait time. I felt like I wasn’t a priority.” These patients reported feeling frustrated that they were devoting much of their time to cancer care and when they were not informed of changes to their treatment schedule, they felt as if they were “treated as just a number.”

Quality of Hospital Facilities and Satisfaction with Hospital COVID-19 Policies

The content of the *hospital facilities* theme changed dramatically over the course of the COVID-19 pandemic. The price and capacity of the parking lot, as well as the quality of furniture in the waiting rooms, were the main topics of discussion from January 1, 2020 to February 1, 2020:

“I have to valet because walking is difficult, and my doctor's office in Hematology said they don't validate parking. I can't keep paying so much to park.”

Other patients spoke to the need for more handicapped parking spaces and the desire for newer magazines. After the COVID-19 pandemic began, many of the topics of concern shifted. Parking availability remained a significant concern but more patients commented on the cleanliness of the space and sanitization practices:

“Why didn't they ask me to use hand sanitizer? I could not find any hand sanitizer when I went to the 4th floor either. I asked where there was some and got an unintelligible response with a hand wave. I never did find any.”

Many patients were anxious about being in such a large medical facility during the pandemic, especially those who have compromised immune systems as a result of cancer treatment. They became unsatisfied when they were unable to adopt personal protective measures and other patients did not adhere by hospital mask mandates:

“People are not all wearing masks in the waiting area! The guard told a man, yet the man said he'd put it on soon. People should not be allowed past the door without a mask. We are all so high risk.”

Aside from mask-wearing of fellow patients, crowded waiting rooms and inability to socially distance were significant concerns for this patient population. Many patients felt tense being around so many other patients in close quarters. Other patients observed that the COVID-19 precautions adopted compromised other forms of safety at the hospital:

“There is always plenty of concern for privacy, but it's much harder to maintain privacy when everyone must remain 6 feet apart and wear masks -- by necessity everyone has to speak a little louder to be sure of being heard & understood by people behind desk; not sure whether anything can be done about this, but it is an issue.”

Lack of privacy associated with social distancing measures came up frequently in patient responses beginning in April and March, 2020. Many clinics in the hospital were transferred to other locations to accommodate social distancing measures yet not all of these spaces guaranteed privacy when the patients spoke to staff.

The *COVID-19* theme encompassed all patient reactions specific to COVID-related policies and practices at Smilow Cancer Hospital. Though patients were appreciative that the hospital was taking the necessary measures to protect its patient population, many lamented the privilege of having family and friends join them in their visits:

“I completely respect restrictions during Covid but it definitely is overwhelming when getting pre/ post op info without a family member to help you digest information. I'm a nurse at the hospital, but even I was overwhelmed and forgot to ask a lot of questions and get answers. if I was allowed to have my husband with me he would have helped greatly.”

Oncology patients discuss a myriad of complex topics and are forced to make many difficult decisions in their appointments with their treatment team. It was intimidating for many patients to have to attend these meetings without family or friends to help them digest the information presented by providers.

One protocol change that was widely accepted in the midst of the pandemic was the expansion of telemedicine services at Smilow. Many patients welcomed this shift and appreciated the option to attend their appointments remotely:

“Telemedicine is the only way I've ever interacted with this provider, and it works well. I much prefer this approach for visits whenever a physical presence is not absolutely required for treatment!”

Patients enjoyed the fact that they could speak with their physician in the privacy of their homes, especially because it helped mitigate any concerns about being exposed to COVID-19 in the hospital facility. The patient population also frequently commented on how much they appreciated their treatment team and the rest of the Smilow Cancer Hospital employees:

“It has been remarkable to see how the staff has adapted in this incredible, bizarre and unprecedented time.

Please let your staff and doctors know how grateful we are for all they do every day. We are so thankful!”

Multiple patients used their surveys to reflect on the fact that their healthcare providers were forced to adapt to new COVID-19 protocols in a short period of time, while maintaining their regular workflow and attempting to stay on schedule. Many patients really appreciated that the Smilow Cancer Hospital staff put in additional effort to help the patient population feel safe and secure.

Discussion

The COVID-19 pandemic has sidelined many initiatives designed to improve patients' care experience. To our knowledge, this is one of the first studies to qualitatively assess patient experience among outpatient oncology patients in the midst of the COVID-19 pandemic. In this study, eligible Smilow Cancer Center patients completed the Press Ganey survey and provided comments in the open-ended portion of the survey. We assessed eight measures of patient satisfaction and clinical effectiveness: overall satisfaction, professionalism, compassion, efficiency, communication, patient engagement, quality of hospital facilities, and, when applicable, treatment experience during the COVID-19 pandemic. The qualitative nature of this study helped to identify and explore the priorities and attitudes of this patient population.

Cross-sectional surveys are the standard method for measuring patient experience in the healthcare setting. According to a systematic literature review of changes in cancer health care

due to the COVID-19 pandemic, 91.9% of relevant studies utilized a cross-sectional survey to assess patient experience. Most of these surveys asked specific questions about delay or disruption of treatment.⁷ Very few studies provide an open forum for patients to discuss the issues they deem important. Rodriguez and colleagues created a 74-item online survey to assess the impact of COVID-19 on patients' experiences, cancer care and the social determinants of health (SDoH).⁵ This comprehensive questionnaire enabled researchers to ask questions about everything from the emotional impact of the pandemic to lack of employment, transportation, and access to healthcare. With that being said, the survey was not validated prior to the onset of the study and the large number of items on the survey resulted in a high degree of loss to follow-up and missing data.

Information obtained through Press Ganey patient feedback scores are used by hospital administrators and providers in a variety of ways including identifying practice variation between providers, targeting areas for practice improvement, and modifying reimbursement to hospitals. However, Press Ganey is underutilized as a tool to measure qualitative patient experience in medical centers throughout the country. In a review of published literature, the term "Press Ganey" returned three studies: a pilot randomized control trial by Newgard and colleagues, a cross-sectional observational study assessing the performance of an "etiquette-based medicine" checklist in the inpatient setting, and the impact of a scribe program on patient throughput, as measured through Press Ganey scores.^{9,10,13} The former study utilized Press Ganey scores to validate monthly comparative funnel feedback reports. Tackett and colleagues reported the association between physician etiquette and the Press Ganey scores for the individual physicians enrolled in the study. None of these studies utilized the raw patient

responses to investigate patient satisfaction with hospital facilities, workflow, or relationships with their providers.

This study indicated an overall improvement in patient experience over the course of the year. In January 2021, 75.1% of respondents reported being satisfied with the care they received; there was a statistically significant change between this time point and the 75.0% who were satisfied with their care in January of the previous year ($p < 0.001$): 75%, 79.2%, 77.4%, 76.0%, 75.1%. This was surprising given the reduction of in-person appointments and supplementary services offered after the onset of the COVID-19 pandemic. Many of these respondents commented on the support and compassion they received from their treatment team, the professionalism of the staff, and how empowered they felt to make decisions about their own healthcare.

From January 2020 to February 2021, there was a reduction in the proportion of patients who reported feeling satisfied with multiple aspects of their patient experience. Respondents' satisfaction with the hospital facilities (e.g. parking, billing, cleanliness of common spaces) declined markedly from the first time-point (from 35.0% to 26.5%), though the association was not statistically significant ($p = 0.064$). The patients also reported feeling less satisfied with the COVID-19 hospital policies, as well as patient adherence to these protocols, as time went on. In April 2020, the first time-point after the COVID-19 pandemic reached the United States, 61.6% of participants were satisfied with COVID-19 protocols. This proportion decreased to 25.0% of the study participants in February 2021 ($p=0.0026$). Patients were disappointed in hand sanitizer availability, adherence to mask mandates by their fellow patients, as well as inability to socially distance in crowded lobbies. Patient comments about satisfaction with staff communication and efficiency remained relatively consistent throughout the course of the pandemic. In January

2020, satisfaction with efficiency and communication were 38.5% and 83.8%, respectively. In February 2021, satisfaction with efficiency and communication were 46.1% and 86.7%, respectively. Respondents continued to express the importance of timely and consistent communication with their providers and administrative staff regarding test results, appointments, and symptom management.

Our study has notable strengths and limitations. First, our use of both qualitative and quantitative methods enabled us to understand the priorities and attitudes of patients currently being treated for cancer in the midst of the COVID-19 pandemic. Our sample size of 12,514 participants, who completed the free-response comments section of the Press Ganey survey, allowed us to analyze 38.1% of the 32,883 patient comments returned from January 1, 2020 to February 1, 2021. This sample size accounts for approximately 5.3% of the estimated 235,000 outpatient visits per year.¹¹ The anonymous nature of the survey encouraged respondents to share their experiences openly.

The timing of the study was another strength, with one time-point prior to the onset of the COVID-19 pandemic in the United States and the following four time-points early on in the pandemic as the medical system implemented and revised new COVID-19 protocols (e.g. mask mandates, expansion of telehealth visits, and creation of temporary spaces that would allow for social distancing).¹⁷ By the second time-point of the study (April 2020 - May 2020), most U.S. states had reported widespread COVID-19 cases and by the final time-point, over 1 million people in the United States had been vaccinated against COVID-19.¹⁷ This was a period of rapid advancement in COVID-19 cases, knowledge of COVID-19 and changing guidelines for hospitals and their patrons alike. The mixed methods nature of the study allowed for exploration of trends in patient experience throughout this tumultuous time period.

The study did contain limitations. The lack of demographic data available prevented the research team from determining if the patient comments were generalizable to the entire Smilow Cancer Center patient population. Another limitation is that the surveys were cross-sectional surveys and not repeat patients; repeat patients would have allowed for more accurate comparisons across time-points. This study examined all patient responses submitted to Smilow Cancer Center after their patient visits and were analyzed on a quarterly basis; future studies should examine trends on a monthly basis so patient experience can be mapped onto COVID-19 trends in the area. The research team also lacked access to the ten patient experience questions answered on a Likert scale. This data would have been useful to anchor the responses in the comments section. It is also important to consider the possibility of nonresponse bias.

Nonresponse bias occurs when a portion of the surveyed population does not respond to the survey. This bias is present when there are differences between those who did and did not respond to the survey questions of interest.¹⁸ It has been assumed that surveys with higher response rates can be considered to have a lower risk of nonresponse bias, although this assumption may not be entirely valid.^{19,20} A meta-analysis investigated the effect of nonresponse bias and did not identify any relationship between response rate and nonresponse bias.²¹ However, many peer-reviewed journals, such as the Journal of the American Medical Association (JAMA), mandate a minimum response rate to be considered for publication. Therefore, it remains uncertain if or when the results of a survey lose validity due to a low response rate.¹⁹

Conclusion

Patients expressed that their involvement in care decisions increased, overall efficiency of the center improved and professionalism trended upwards. There were significant increases in overall patient satisfaction and empathy from staff remained constant. There was a decrease in patients who reported being satisfied with technological support, interpreter services, facility cleanliness, and parking options. Finally, there was evidence of a slight increase in quality of communication across the study period. Patients of all health statuses have been forced to adapt to changes in the healthcare system as a result of the COVID-19 pandemic. These results may be utilized to inform clinician practices, and by extension, improve patient satisfaction.

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Table 1: Code Book and Definition of Codes

Qualifier	Description
Satisfied	Overall positive experience
Unsatisfied	Overall negative experience
Professional	Suitable behavior for occupation
Unprofessional	Unsuitable behavior for occupation
Compassionate	Empathetic
Disrespectful	Did not take the patient's emotions into account
Efficient	Timely administration of care
Inefficient	Failure to make best use of time
Positive Communication	Hospital staff relayed information effectively and responded to questions in a timely manner
Poor Communication	Hospital staff did not relay information effectively or respond to questions in a timely manner
Patient Engagement	A patient's knowledge, skills, and ability to manage their own health are acknowledged
Lack of Patient Engagement	A patient's knowledge, skills and ability to manage their own health care are not acknowledged
Hospital Facilities (+)	Positive experience in regard to technological support, facility cleanliness, and parking
Hospital Facilities (-)	Negative experience in regard to technological support, facility cleanliness, and parking
COVID (+)	Positive comment related to treatment experience in the COVID-19 pandemic
COVID (-)	Negative comment related to treatment experience in the COVID-19 pandemic

Table 2. Satisfaction by Time-Point*

Characteristic	Jan-Feb 2020 (n = 2570)	April-May 2020 (n =1947)	July-Aug 2020 (n = 2750)	Oct-Nov 2020 (n = 2677)	Jan-Feb 2021 (n = 2570)	p [†]
Satisfied, n (%)	1189 (75.0)	915 (79.2)	1352 (77.4)	1391 (76.0)	1355 (75.1)	<0.0001
Unsatisfied	397 (25.0)	241 (20.8)	395 (22.6)	440 (0.24)	450 (24.9)	
Total Respondents	1586	1156	1747	1831	1805	

* Numbers may not sum to totals due to missing data, and column percentages may not sum to 100% due to rounding.

† P-value for analysis of variance χ^2 test (categorical variable). Bolded p-values are significant at the 0.05 level.

Table 3. Professionalism by Time-Point*

Characteristic	Jan-Feb 2020 (n = 2570)	April-May 2020 (n =1947)	July-Aug 2020 (n = 2750)	Oct-Nov 2020 (n = 2677)	Jan-Feb 2021 (n = 2570)	p [†]
Professional, n (%)	923 (73.3)	672 (82.4)	927 (77.6)	1018 (77.4)	965 (75.7)	0.0509
Unprofessional	336 (26.7)	144 (17.6)	267 (22.4)	297 (22.6)	310 (24.3)	
Total	1259	816	1194	1315	1275	

* Numbers may not sum to totals due to missing data, and column percentages may not sum to 100% due to rounding.

† P-value for analysis of variance χ^2 test (categorical variable). Bolded p-values are significant at the 0.05 level.

Table 4. Compassion by Time-Point*

Characteristic	Jan-Feb 2020 (n = 2570)	April-May 2020 (n =1947)	July-Aug 2020 (n = 2750)	Oct-Nov 2020 (n = 2677)	Jan-Feb 2021 (n = 2570)	p [†]
Compassionate, n (%)	420 (83.8)	215 (92.3)	336 (88.4)	398 (91.9)	359 (86.7)	0.0428
Disrespectful	81 (16.2)	18 (7.7)	44 (11.6)	35 (8.1)	55 (13.3)	
Total	501	233	380	433	414	

* Numbers may not sum to totals due to missing data, and column percentages may not sum to 100% due to rounding.

† P-value for analysis of variance χ^2 test (categorical variable). Bolded p-values are significant at the 0.05 level.

Table 5. Efficiency by Time-Point*

Characteristic	Jan-Feb 2020 (n = 2570)	April-May 2020 (n =1947)	July-Aug 2020 (n = 2750)	Oct-Nov 2020 (n = 2677)	Jan-Feb 2021 (n = 2570)	p [†]
Efficient, n (%)	167 (38.5)	123 (55.2)	161 (42.4)	172 (41.3)	194 (46.1)	0.5213
Inefficient	267 (61.5)	100 (44.8)	219 (57.6)	244 (58.7)	227 (53.9)	
Total	434	223	380	416	421	

* Numbers may not sum to totals due to missing data, and column percentages may not sum to 100% due to rounding.

† P-value for analysis of variance χ^2 test (categorical variable). Bolded p-values are significant at the 0.05 level.

Table 6. Communication by Time-Point*

Characteristic	Jan-Feb 2020 (n = 2570)	April-May 2020 (n =1947)	July-Aug 2020 (n = 2750)	Oct-Nov 2020 (n = 2677)	Jan-Feb 2021 (n = 2570)	p [†]
Communication, n (%)	207 (42.5)	157 (56.9)	271 (58.8)	252 (49.7)	243 (52.5)	0.9254
Poor Communication	280 (57.5)	119 (43.1)	190 (41.2)	255 (50.3)	220 (47.5)	
Total	487	276	461	507	463	

* Numbers may not sum to totals due to missing data, and column percentages may not sum to 100% due to rounding.

† P-value for analysis of variance χ^2 test (categorical variable). Bolded p-values are significant at the 0.05 level.

Table 7. Patient Engagement by Time-Point*

Characteristic	Jan-Feb 2020 (n = 2570)	April-May 2020 (n =1947)	July-Aug 2020 (n = 2750)	Oct-Nov 2020 (n = 2677)	Jan-Feb 2021 (n = 2570)	p [†]
Patient Engagement, n (%)	255 (75.0)	107 (68.2)	182 (74.9)	178 (67.7)	291 (71.3)	0.0006
Poor Patient Engagement	85 (25.0)	50 (31.9)	61 (25.1)	85 (32.2)	117 (28.7)	
Total	340	157	243	263	408	

* Numbers may not sum to totals due to missing data, and column percentages may not sum to 100% due to rounding.

† P-value for analysis of variance χ^2 test (categorical variable). Bolded p-values are significant at the 0.05 level.

Table 8. Hospital Facilities by Time-Point*

Characteristic	Jan-Feb 2020 (n = 2570)	April-May 2020 (n =1947)	July-Aug 2020 (n = 2750)	Oct-Nov 2020 (n = 2677)	Jan-Feb 2021 (n = 2570)	p [†]
Hospital Facilities, n (%)	79 (35.0)	55 (43.0)	101 (42.3)	73 (29.8)	59 (26.5)	0.0643
Unsatisfied with HF	147 (65.0)	73 (57.0)	138 (57.7)	172 (70.2)	164 (73.5)	
Total	226	128	239	245	223	

* Numbers may not sum to totals due to missing data, and column percentages may not sum to 100% due to rounding.

† P-value for analysis of variance χ^2 test (categorical variable). Bolded p-values are significant at the 0.05 level.

Table 9. COVID Policy Satisfaction by Time-Point*

Characteristic	Jan-Feb 2020 (n = 2570)	April-May 2020 (n =1947)	July-Aug 2020 (n = 2750)	Oct-Nov 2020 (n = 2677)	Jan-Feb 2021 (n = 2570)	p [†]
COVID Satisfied, n (%)	--	90 (61.6)	59 (39.9)	37 (33.6)	15 (25.0)	0.0026
COVID Unsatisfied	--	56 (38.4)	89 (60.1)	73 (66.4)	45 (75.0)	
Total	--	146	148	110		

* Numbers may not sum to totals due to missing data, and column percentages may not sum to 100% due to rounding.

† P-value for analysis of variance χ^2 test (categorical variable). Bolded p-values are significant at the 0.05 level.

Figure 1: Satisfaction Code

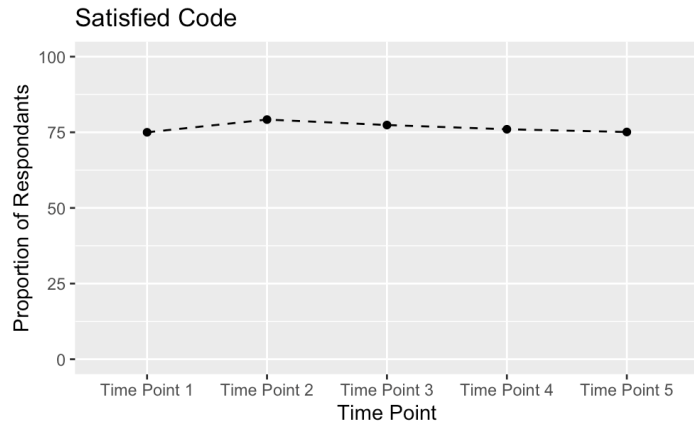


Figure 2: Professionalism Code

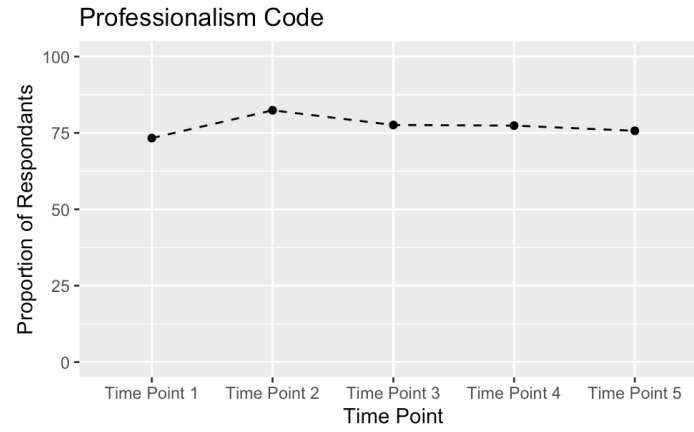


Figure 3: Compassion Code

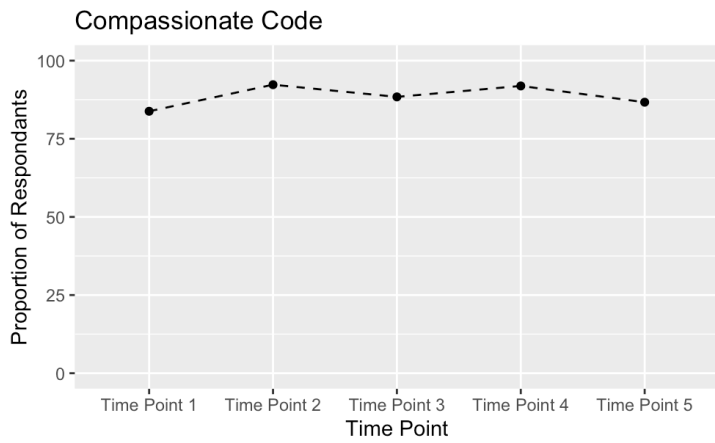


Figure 4: Efficiency Code

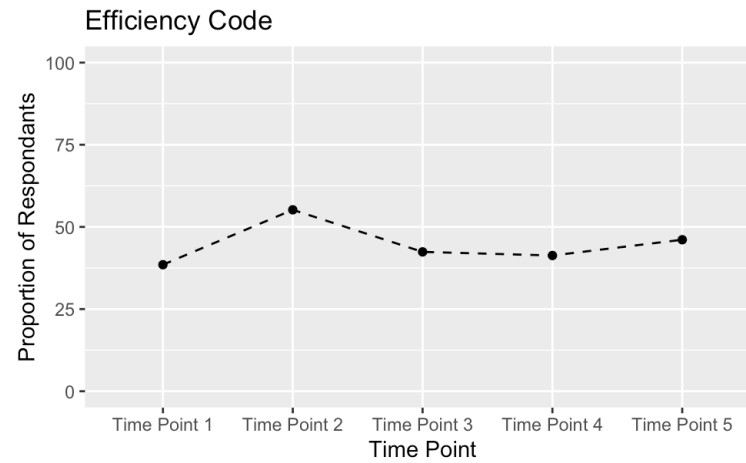


Figure 5: Communication Code

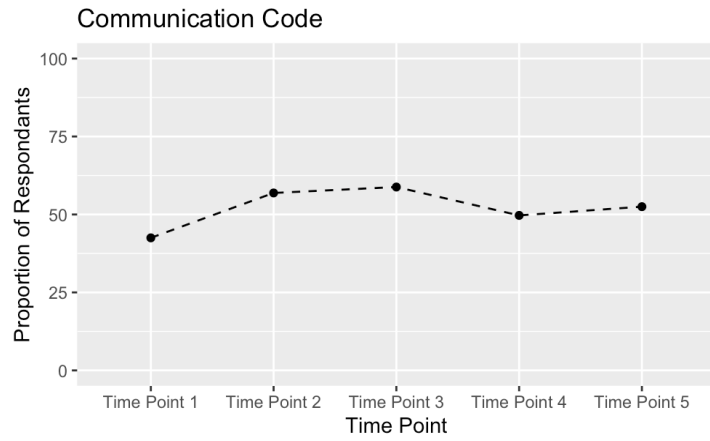


Figure 6: Patient Engagement Code

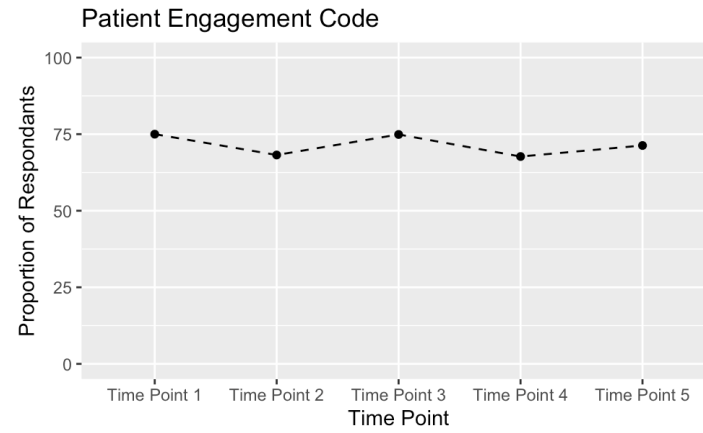


Figure 7: Hospital Facilities Code

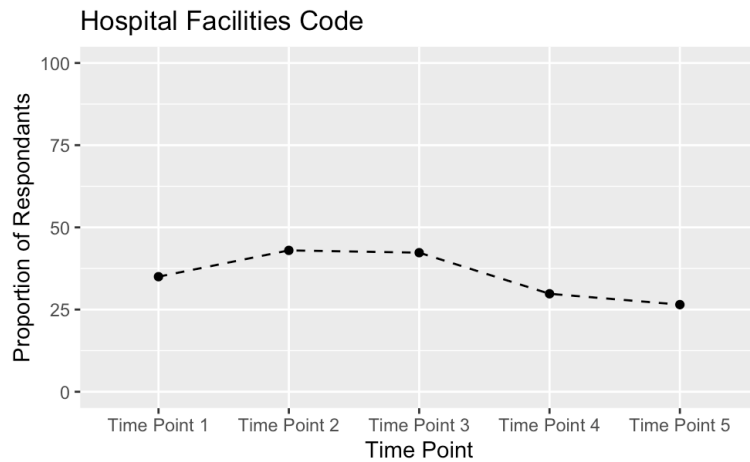


Figure 8: COVID Protocol Code

