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Racial and Sociodemographic Disparities in Telehealth Access and Utilization during the COVID-19 Pandemic

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Abstract

BACKGROUND: Telehealth is not new, but licensing restrictions, HIPAA compliance issues, and lack of reimbursement were significant barriers that hindered its success in the past. Enabling practices to adopt telehealth so that in-person care could be limited to urgent patients and curbed use of finite clinical resources like personal protective equipment for which there were significant shortages. This expansion allowed services including, but not limited to, home visits, therapy services, emergency consults, and nursing facilities visits to be conducted remotely.

AIM: The study objectives are to describe telehealth utilization rates among gynecology (OB/GYN) patients during the first 4 months of the COVID-19 pandemic by race/ethnicity and insurance coverage and to investigate telehealth access disparities.

METHODS: A cross-sectional analysis design was employed. Data abstraction was performed using the electronic medical records of UMass Memorial Medical Center (UMMMC). A convenience sample of 9370 women who received their telehealth or in-person care at the UMMMC were included in this study.

RESULTS: Between March 15, 2020, and July 30, 2020, in total, 15,362 encounters were completed. Throughout the timeframe included in this study, 81.34% of appointments were conducted in person, and 18.66% were completed using telehealth. The age of telehealth patients ranged from 17 to 97, with a mean age of 45. Most of the patients were White (n = 1202, 63.4%) and held private health insurance (n = 975, 52.4%). Hispanic and Asian patients were less likely to attend their telehealth appointment than patients of other races ($p < 0.001$). Patients with private health insurance were more likely to attend their telehealth appointments than patients with public health insurance ($p < 0.001$).

CONCLUSION: Telehealth services have been providing patients with access to OB/GYN care during this challenging time and have enhanced health-care delivery opportunities. This study identifies a clear need to improve telehealth access and utilization rates among racial and ethnic minority groups and persons with public insurance.

Introduction

In late December 2019, a novel strain of coronavirus, severe acute respiratory syndrome (SARS)-CoV-2, emerged in Wuhan, China, as the casual viral agent of the now worldwide COVID-19 (coronavirus disease of 2019) pandemic. As of June 2021, COVID-19 cases in the United States (U.S.) exceeded 33,000,000 and have led to over 600,000 deaths, representing the highest country total worldwide [1]. Although similar to the 2003 SARS outbreak in Hong Kong regarding origin and virus homology, SARS-CoV-2 has higher viral transmissibility [2]. Moreover, significantly more patients with COVID-19 exhibit mild to no symptoms, which enables them to unknowingly perpetuate the spread of the virus through person-to-person contact and respiratory droplets [3]. The global approach has enforced isolation for those exposed and promotes "social distancing" for the general population to decrease transmission rates. On March 1, 2020, the President of the United States declared COVID-19 a national emergency. State and local governments across the country began imposing lockdowns and social restrictions by closing all nonessential services to restrict the spread of COVID-19. Hospitals began suspending elective surgeries, and clinics started decreasing in-person appointment volumes. In mid-March 2020, the Centers for Medicare and Medicaid Services (CMS) extended health coverage for Medicare and Medicaid patients to include telehealth visits during the COVID-19 pandemic.

Telehealth is not new, but licensing restrictions, HIPAA compliance issues, and lack of reimbursement were significant barriers that hindered its success in the past. CMS revised their telehealth policies and erased obstacles that impeded the implementation and expansion of telehealth. Thus, enabling practices to adopt telehealth so that

in-person care could be limited to urgent patients and curbed use of finite clinical resources like personal protective equipment for which there were significant shortages [4]. This expansion allowed services including, but not limited to, home visits, therapy services, emergency consults, and nursing facilities visits to be conducted remotely [5]. Patients managing chronic diseases were able to follow up with their physicians without subjecting themselves to unnecessary risks associated with visiting clinics in person. Moreover, home-based video encounters were used to assess and triage COVID-19 patients when testing services were limited [6]. In turn, this minimized exposure to both patients and caregivers, in addition to allowing providers who were quarantined to continue providing care [7].

Before the outbreak, 76% of hospitals in the U.S. connected with patients and consulting practitioners through video [5]. The existing infrastructure enabled practices to transition from in-person visits to telehealth rapidly. As a result, changes that would have usually required months of planning, pilot testing, and training were condensed to days. Initially, visits at many clinics were limited to telephone services, but they quickly shifted to video visits to prioritize better patient care [7]. Despite this abrupt paradigm shift in health-care delivery, a survey conducted at NYU found that patient satisfaction remained unchanged [8].

Telehealth in (OB)/GYN

In the obstetrics and gynecology (OB/GYN) space, medical centers across the country have been using telehealth to implement a wide range of obstetric services during prenatal to postpartum care [9]. Various means of technology applications have been used. For example, texting and tele-counseling have been used since mobile phones became readily available for services such as diabetes management and domestic violence counseling [10]. In addition, asynchronous telemedicine is frequently used to deliver results of laboratory studies and ultrasound scans [10]. Moreover, videoconferencing has been used to supplement or replace in-person routine visits and consultations with specialists [9]. Telehealth has been used for follow-up visits and access to lactation consultants [9]. However, large-scale implementation of such services before the COVID-19 pandemic was minimal despite evidence that telehealth interventions have favorable clinical outcomes among OB/GYN patients [11]. Before March 2020, implementing telehealth in the United States in the OB GYN space was constrained by factors such as limited internet access in rural areas, high startup costs, barriers in workforce reconfiguration, data security, malpractice liability, patient interest, clinician acceptance, and inconsistent reimbursement requirements across insurance plans [12].

Racial, ethnic, and socioeconomic disparities

Telehealth has become a rapidly expanding method of health-care delivery during the COVID-19 pandemic. This shift, however, has differential impacts on patients. Studies examining the first 30 days of telehealth expansion during the COVID-19 pandemic found that utilization was higher for women, those age 65 years and older, self-pay patients, and those with Medicaid and Medicare as primary payers [13]. Under-represented populations and those living in rural areas were less likely to use any type of telehealth service. Among all patients who did utilize telehealth, the likelihood of a full audio-video telehealth visit was lower for patients who were older than 65, Black, from urban areas, or who were self-pay, or publicly insured including Medicaid or Medicare [13].

One possible explanation for these disparities is socioeconomic status. When telehealth services were initially expanded in March 2020, utilization rates were higher among lower-income and older patients because these populations perceived that they did not have the capability to self-manage health conditions [13]. Although they participated in telehealth, encounters were more likely to be audio only because lower-income patients were less likely to have the mobile devices and computers needed for video telehealth [13]. In addition, patients of low socioeconomic status, communities of color, and older than 85 were less likely to have digital access at home. These patients are often forced to use audio-only services through telephones [14].

These patterns were observed in Black persons as well. Early in the pandemic, Black patients represented a more significant proportion of encounters during the telehealth expansion than the previous year but were less likely to use telehealth than White patients. Moreover, when they did use telehealth, they opted for audio-only services [13].

Socioeconomic status alone does not sufficiently explain why utilization rates differ between White and under-represented minority populations. Studies have found that attitudes toward telehealth and the degree of disparities in access differ between racial and ethnic backgrounds. For instance, a focus group performed in inner city Los Angeles found that attitudes toward telehealth vary greatly between Black and Hispanic populations [15]. Black persons reported concerns about the physical absence of the physician when using telehealth because they perceived that they would be unable to monitor the physician's qualifications and level of attention. Moreover, they were worried about being allocated less qualified physicians while using telehealth. These reservations are thought to be related to trust issues in an era of continued institutionalized and system racial discrimination in health care [15].

In contrast, Hispanic populations viewed telehealth more favorably than Black populations.

Several studies have found that compared to other under-represented minority groups, Hispanic persons are more likely to download and use health apps on their phones. More than 90% of migrant workers surveyed in one study expressed willingness to partake in telehealth if technical help was provided. A survey of a convenience sample of Hispanic patients at a rural health-care facility in Texas found that more than 80% of patients owned a smartphone and had access to telehealth if the option was provided [16]. Hispanic subjects who are given the option to partake in telehealth are just as likely to keep telehealth appointments as in-person appointments and are equally satisfied with the care they receive [17]. In addition, many Hispanic even expressed a preference for telehealth over in-person visits which seemed rooted in embarrassment about gender, age, and class differences between the patient and provider. Moreover, they expressed less concern about lack of physician contact than Black persons [17].

Telehealth has played a central role in health-care delivery during the COVID-19 pandemic. Given the current state of the pandemic in the United States, telehealth will likely be incorporated as a routine medium by practices as we settle into a "new normal." As such, it is critical to find and address disparities in access and effectiveness of telehealth. Therefore, the study objectives are to describe telehealth utilization rates among OB/GYN patients during the first 4 months of the COVID-19 pandemic by race/ethnicity and insurance coverage, and to investigate telehealth access disparities.

The information gathered will be crucial to help guide policymakers, hospitals, and providers on how to best deliver health-care services to all patient populations for the remainder of this pandemic and prepare for pandemics in the future.

Methods

Study design

A cross-sectional analysis was employed in this study. Cross-sectional analysis is a type of observational study where the investigator simultaneously measures both the exposure and the outcome. Participants are selected based on the study's pre-established inclusion and exclusion criteria [18].

Sample inclusion/exclusion criteria

Women who received their telehealth or in-person care at the UMass Memorial Medical Center (UMMMC) departments of OBGYN during Phase 1 of the COVID-19 pandemic, between March 2020 and August 2020, were included in the study. The UMass Memorial Medical Center is an urban-based academic medical center that serves a diverse population inclusive of all of central Massachusetts and the boards of Rhode Island, Connecticut, and New Hampshire. Following data collection, study participants were stratified based on factors including race, ethnicity, type of visit, and insurance type. An institutional-based IRB, Human Subject Protection, approved the study.

Sampling and sample

The data from patients having encounters occurring between March 2020 and August 2020, scheduled in the Department of OB and GYN, at UMass Memorial Medical Center, were collected. It included all encounters whether intended to be conducted in person or through telehealth, and whether they were completed, canceled, or no shows. Electronic and manual retrospective data abstraction was employed using the Electronic Medical Record from the UMMMC Department of OBGYN. Then, data extracted electronically were cleaned and organized for final analysis by a specialized OBGYN biostatistician.

Data analysis

Patient demographics and general characteristics were analyzed for all patients included in the study using descriptive analysis. Mean, standard deviation (S.D.), median, and range were used to describe continuous- or ordinal-type data. Frequencies and percentages were used categorical data. A Chi-square test was performed to see if there was a significant difference in appointment status (completed vs. not completed) and insurance type between racial/ethnic groups. To account for multiple visits per patient, a random effects multinomial logistic regression model was used to see if there were differences in cancelation reason among racial/ethnic groups. For all statistical analyses, a two-sided $p < 0.05$ was considered statistically significant. Data were analyzed using Stata MP version 16.1 (StataCorp. 2020. Stata Statistical Software: Release 16. College Station, Tx: StataCorp LP.).

Results

General characteristics and demographics

Based on study criteria, a total of 33,984 encounters for 9370 unique patients were included in the analysis. Participants' demographics and general characteristics, including race, ethnicity, experience with telehealth, experience with an in-person visit, and insurance type, are described in Table 1.

The most represented racial/ethnic group is White (61%) followed by Hispanic/Latino (23%). Black, Asian, and other/multiracial participants each represented <10% of the dataset. Of all the participants included in the analysis, 45% have never completed an in-person visit and 80% have never completed in a telehealth visit between March 15, 2020, and July 30, 2020. About 20% have completed both in-person and telehealth visits. Forty-nine percent of participants had private insurance, 49% had public insurance, and 2% were uninsured. In total, 15,362 out of 33,984 encounters were completed between March 15, 2020, and July 30, 2020. Throughout the timeframe included in this study, 81.3% of appointments were conducted in person and 18.6% were completed using telehealth (Table 2).

Table 1: Demographic and socioeconomic variables for the participants in this study

Demographic characteristics	Total (n = 9.370)
	n (%)
Race/ethnicity	
White	5.693 (60.8)
Hispanic/Latino	2.149 (22.9)
Black	738 (7.9)
Asian	421 (4.5)
Other/multiracial	369 (3.9)
Language	
English	7.898 (84.3)
Spanish	757 (8.1)
Portuguese	338 (3.6)
Other	377 (4.0)
Age, mean (SD)	44.2 (17.8)
Insurance type	
Private	4.582 (49.2)
Public	4.570 (49.0)
None	168 (1.8)
Has a completed telehealth visit	
No	7.475 (79.8)
Yes	1.895 (20.2)
Has a completed in-person visit	
No	4.231 (45.2)
Yes	5.139 (54.8)
Completed both in-person and telehealth	1.185 (20.3)

Nearly two-thirds (65.1%) of all telehealth visits were conducted in April 2020 and May 2020. In-person visits starkly dropped from 91.9% of all appointments in March to 60.4% in April, corresponding to when COVID-19 restrictions were implemented in Massachusetts and the UMass system. The proportion of in-person visits steadily increased to 66.4% of all appointments in May and 86.7% in June. By July 2020, 92.3% of all visits were conducted in person and 7.7% were through telehealth, which is comparable to the values observed during the beginning of the pandemic in March 2020.

Table 2: Distribution of completed telehealth and in-person appointments for the department of OB/GYN

Visit type			
Month	In-person (N, row %)	Telehealth (n, row %)	Total
March	2.803 (91.9)	248 (8.1)	3.051
April	1.461 (60.4)	956 (39.6)	2.417
May	1.793 (66.4)	906 (33.6)	2.699
June	3.038 (86.7)	466 (13.3)	3.504
July	3.377 (92.3)	282 (7.7)	3.659
Total	12.472 (81.4)	2.858 (18.6)	15.330

Visit cancellations

The analysis included visits that were cancelled for the following reasons: Pandemic or patient reasons, change providers, hospitalization, provider reason, and insurance or financial reasons and is described in Table 3.

A total of 16,125 encounters were canceled between March 15, 2020, and July 30, 2020. The top three reasons for cancellations were due to the pandemic, personal reasons, and provider conflicts. Of this total, 56.3% of patients canceled due to the pandemic, 27.1% of patients canceled for personal reasons, and 6.4% were canceled due to a conflict from the provider.

Of the 16,125 canceled visits, 15,607 were intended to be in-person (96.8%). For in-person visits, 56.6% of patients canceled due to the pandemic, 26.8% of patients canceled for personal reasons, and 6.5% were canceled due to a conflict from the provider.

Of the 16,125 canceled visits, 518 were telehealth appointments (3.2%). For these appointments, 49.4% of patients canceled due to the pandemic, 36.7% of patients canceled for personal reasons, 3.5% were canceled because the patient was hospitalized/ill, and 3.3% were canceled due to a conflict from the provider.

Racial and ethnic disparities

The data were stratified by race and ethnicity and evaluated for the proportion of each self-identified racial group who completed a telehealth visit, in-person visit, or combination of the two. In addition, insurance types across the racial and ethnic groups were analyzed as well. The data are presented in Tables 4 and 5.

The proportion of patients who completed telehealth visits was similar across all race and ethnic groups besides Hispanic/Latino (Table 3). White, Black, Asian, and Other/multiracial patients completed telehealth visits at a rate of ~21% whereas Hispanic patients completed telehealth visits at a rate of 17%.

Table 3: OB/GYN patients stratified by race\ethnicity

Visit type	Race/ethnicity					p-value
	White	Hispanic/Latino	Black	Asian	Other/multiracial	
	n = 5.693 (%)	n = 2.149 (%)	n = 738 (%)	n = 421 (%)	n = 369 (%)	
Visit type combination						
Has a completed telehealth visit only	2.314 (65.8)	996 (73.1)	335 (68.1)	157 (63.1)	152 (66.7)	< 0.001
Has a completed in-person visit only	452 (12.8)	146 (10.7)	47 (9.6)	33 (13.3)	32 (14.0)	
Completed Both in-person and telehealth	752 (21.4)	220 (16.2)	110 (22.4)	59 (23.7)	44 (19.3)	
Insurance type						
Private	3.203 (56.5)	628 (29.4)	334 (45.8)	296 (71.2)	121 (32.9)	< 0.001
Public	2,401 (42.3)	1.451 (67.9)	369 (50.6)	111 (26.7)	238 (64.7)	
None	66 (1.2)	58 (2.7)	26 (3.6)	9 (2.2)	9 (2.4)	

Table 4: OB/GYN patients stratified by race-ethnicity

Visit type	Race/ethnicity					p-value
	White	Hispanic/Latino	Black	Asian	Other/multiracial	
	n = 5.693 (%)	n = 2.149 (%)	n = 738 (%)	n = 421 (%)	n = 369 (%)	
Has a completed telehealth visit						
No	4.489 (78.9)	1,783 (83.0)	581 (78.7)	329 (78.1)	293 (79.4)	0.001
Yes	1.204 (21.1)	366 (17.0)	157 (21.3)	92 (21.9)	76 (20.6)	
Has a completed in-person visit						
No	2.627 (46.1)	933 (43.4)	293 (39.7)	205 (48.7)	173 (46.9)	0.003
Yes	3.066 (53.9)	1,216 (56.6)	445 (60.3)	216 (51.3)	196 (53.1)	

The proportion of patients who completed in-person appointments varied significantly between racial and ethnic groups, ranging from 60.3% to 51.3% ($p = 0.003$). Unlike with telehealth visits, the variation between the ethnic and racial groups was more pronounced (Table 3). Of all patients, Blacks were most likely to complete an in-person visit (60.3%) followed by Hispanic/Latino patients (56.6%). White (53.9%) and other/multiracial patients (53.1%) elected to complete in-person visits at similar proportions. Asian patients were least likely to complete an in-person visit (51.3%).

The proportion of patients who completed both in-person and telehealth appointments varied significantly between racial and ethnic groups ($p < 0.001$). However, Hispanic/Latino attended both at a rate of 16.2% and other/multiracial patients at a rate of 19.3%. This is contrasted between White, Black, and Asian patients who completed both telehealth and in-person visits at a rate of ~22%.

This analysis also evaluated differences in insurance types. Insurance type is significantly different by race ($p < 0.001$). Asian patients were most likely to have private insurance at the time of the appointment (71.2%) followed by White patients (56.5%). Hispanic/Latino patients were least likely to be covered by private insurance (29.4%) and most likely to be covered by public insurance (67.9%). Of all racial/ethnic groups, Black patients were uninsured at the highest rate (3.6%).

Ethnic disparities in visit cancellations

Of all canceled visits, the top three reasons for cancellations were due to the pandemic, personal reasons, and provider conflicts. The differences between racial groups were statistically significant for the following cancellation reasons: Pandemic, patient reason, and hospitalization/ill.

The largest differences were seen with other/multiracial patients who were most likely (62.6%) to cancel for reasons related to the pandemic, while Asian patients were least likely to do so (53.9%). White patients were most likely to cancel for patient reasons (28.6%), whereas other/multiracial patients were least likely to cancel for patient reasons. Asian patients were most likely (9.1%) to cancel due to hospitalization/illness, while other/multiracial patients were least likely (3.8%).

Discussion

This study aimed to examine if there were racial/ethnic and insurance type differences in attending their telehealth or in-person care at OBGYN departments the UMMMC. This study was conducted during Phase 1 of the COVID-19 pandemic, between March 2020 and August 2020.

More than half of all scheduled encounters were canceled during this time period. Of the completed encounters, 81.4% were in person and 18.6% were through telehealth. Two-thirds of all completed telehealth appointments were done so in April 2020 and May 2020, when pandemic restrictions were the most stringent in Massachusetts. This suggests a strong overall preference for in-person visits over telehealth which needs to be further investigated. Additional information is needed regarding if patients versus providers had preferences, and for what reasons, and how patients were offered or selected for telehealth visits. Of the telehealth visits that were canceled, almost half of patients noted that they canceled due to the pandemic (as opposed to personal reasons, provider conflicts, and hospitalization), which suggest that a sizable proportion of people would instead defer or cancel an appointment than choosing to see their provider through telehealth. These results are consistent across all ethnic groups.

In the early phases of the COVID-19 pandemic, the previous study revealed significant variations in

Table 5: In-person appointment cancellation reasons stratified by race/ethnicity

Cancellation reasons	White	Hispanic/Latino	Black	Asian	Other/multiracial	p-value
	n = 10.211 (%)	n = 3.441 (%)	n = 1.181 (%)	n = 738 (%)	n = 607 (%)	
Cancelation reason						
Pandemic	5.725 (56.1)	1,947 (56.6)	643 (54.4)	398 (53.9)	380 (62.6)	< 0.001
Patient reason	2.922 (28.6)	855 (24.8)	309 (26.2)	180 (24.4)	141 (23.2)	
Changed Drs.	141 (1.4)	64 (1.9)	25 (2.1)	17 (2.3)	3 (0.5)	
Hospitalized/Ill	525 (5.1)	259 (7.5)	103 (8.7)	67 (9.1)	23 (3.8)	
Provider reason	647 (6.3)	207 (6.0)	75 (6.4)	62 (8.4)	38 (6.3)	
Same day APPT/sooner APPT	175 (1.7)	60 (1.7)	16 (1.4)	7 (0.9)	13 (2.1)	
Insurance/financial	76 (0.7)	49 (1.4)	10 (0.8)	7 (0.9)	9 (1.5)	

telehealth use among racial and ethnic groups [19]. Regarding racial and ethnic differences, Asian patients were significantly more likely to attend a telehealth appointment and were substantially less likely to attend an appointment in person (51.3%). Asian patients were also most likely to have private insurance at the time of the appointment (71.2%). Since private insurance is a reasonable proxy for higher socioeconomic status, findings could suggest that patients who had the means and access to technology chose telehealth appointments to minimize their risks of being exposed to COVID-19. However, findings could also potentially suggest that there are cultural differences in the perceived risk of COVID-19. According to a study done in the United Arab Emirates, the community has a generally good attitude toward and acceptance of telehealth services. The use of telemedicine or telehealth during the pandemic was highly correlated with some sociodemographic and clinical factors [20]. Asian and non-English speaking patients used telemedicine less frequently than older, female, Black, and Latina patients in a study of patients scheduled for primary care and medical specialty ambulatory telemedicine or telemedicine visits at a large academic health system during the early phase of the COVID-19 pandemic [21]. Asian patients were most likely to attend only telehealth appointments and least likely attend in-person visits, even after some of the state restrictions were lifted. COVID-19 originated in East Asia, and during the time frame, these data were the collection, Asian governments, and news outlets were more cautious about the pandemic compared to the American government and media sources. These findings are likely associated, especially considering that China is the most common country of origin of immigrants living in Worcester County, according to the U.S. Census Data. Our results also found that Blacks (60.3%) and Hispanics (56.6%), two traditionally disadvantaged minority groups, were significantly more likely than Asian, White, and other/multiracial patients to attend in-person appointments and least likely to have attended only telehealth appointments. Black (9.6%) and Hispanic (10.7%) were least likely to have attended only telehealth appointments. During the pandemic, Hispanic patients were less likely to use telehealth than non-Hispanic White and non-Hispanic Black patients. For the Hispanic community to use telehealth, supportive policies that are sensitive to their culture are required [19].

Given how these two disadvantaged groups were also most likely to be uninsured or on public insurance, this disparity could possibly be attributed to a lack of access to appropriate technologies. However, the literature suggests more distrust in telehealth among disadvantaged population groups, most notably among Black Americans. One study found that Black patients preferred seeing their provider in-person to ensure that they are being given the appropriate level of care and attention [15]. Moreover, Black women in the United States are 3.3 times more likely to die from pregnancy-related complications compared to White women [22]. As such, this could explain why Black patients canceled telehealth appointments and were significantly more likely to have attended in-person only appointments despite the pandemic.

Hispanic/Latino patients mostly completed in-person appointments only (73.1%) and least likely to have completed both in-person and telehealth appointments (16.2%). They were least likely to have completed any telehealth visit (17.0%). As previously discussed, Hispanic/Latino patients were most likely (67.9%) to have public insurance, which suggests lower socioeconomic status. As such, lower participation in telehealth could be due to difficulties accessing appropriate technology. Moreover, the two most common native non-English languages in Worcester County are Spanish and Portuguese (Brazilian). As such, preference in in-person appointments and lack of participation in telehealth could also be attributed to the need to use a translator. Before the pandemic, live interpreter services were offered for Spanish and Portuguese. It is possible that patients who rely on these resources might have assumed that an in-person visit was necessary to ensure they understood their provider.

Implications

UMass Memorial Medical Center is an academic medical center in Worcester County of Central Massachusetts and serves a diverse population. However, there are notable disparities between racial and ethnic groups in the utilization of telehealth services during the COVID-19 pandemic.

In short, White, Asian, and multiracial/other patients are more likely to use telehealth while Blacks and Hispanic/Latino patients were more likely to use in-person appointments. A prospective framework reflecting the authors' implications for the potential future applications and opportunities of telehealth has been constructed as a result of the significant development in the use of telehealth in various specialized hospitals and clinics [23].

Conclusion

Our study findings indicated that telehealth services have been providing patients with access to OB/GYN care during this challenging time and have enhanced health-care delivery opportunities. This study identifies a clear need to improve telehealth access and utilization rates among racial and ethnic minority groups and persons with public insurance. Our findings suggest that investigations need to be initiated to determine the root cause of these disparities. This

is essential to prepare for future disruptions in healthcare delivery where in-person appointments might not be as accessible. First off, surveys and focus groups must be administered to identify contributing factors to the disparities observed (as described in the "Limitations" section below). Then, efforts need to be taken to directly address the root causes. For instance, if it was determined that lack of technological literacy contributed to hesitancy using telehealth, tutorials and individualized I.T. guidance could be offered to patients. If language barriers are found to be an issue, providers should be notified to inform patients that interpreter services are available through telehealth services. These proactive steps to mitigate disparities in telehealth utilization will ensure more equal access to health care when another pandemic occurs.

Limitations

Given the data we have, we can only speculate why Black and Hispanic/Latino patients prefer in-person appointments over telehealth appointments because our extracted data do not ask participants to specify why patients chose one medium over the other versus a combination of both. The extracted data did not answer questions about access to technology, reliable internet, and proficiency of technology use. Moreover, it did not ask if the patients have language barriers that might affect the visit. For instance, patients who need an interpreter might opt for an in-person appointment even if they have access to technology if they thought interpreter services were only available in person.

Recommendations for future research

To better understand why there were discrepancies in telehealth appointments during the COVID-19 pandemic between racial and ethnic groups, follow-up interviews need to be administered to the patients captured in this study. The interview should ask patients about their attitudes about telehealth verses in-person appointments, access to technology, understanding of what a telehealth appointment entails (during their initial appointment time between March and July 2020), language barriers, occupation/work hours, and access to the internet.

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