Insight to urology patients' preferences regarding telemedicine

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Introduction: *Due to COVID-19, telemedicine has become a common method of healthcare delivery. Our goal was to evaluate urology patients' satisfaction with telemedicine, examine patient preferences, and identify opportunities for improvement in readiness, access, and quality of care.*

Materials and methods: *A total of 285 adult urology patients who completed at least one telemedicine visit from September to December 2020 were eligible. A paper survey was disseminated by postal mail with an option to complete electronically. Those who returned completed surveys received a $15 gift card.*

Results: *Seventy-six subjects completed the survey (response rate of 27%). The most common age bracket of the respondents was 70-79 years (37%).*

Readiness – To prepare, many subjects (49%) read the provided instructions. Most (91%) thought they were adequately prepared. A majority (82%) were satisfied with the ease of set up.

Access – Types of visits included established patients (71%), new patient visits (17%), and postoperative visits (9%). Most respondents (84%) did not have difficulty accessing the visit.

Quality of care – All respondents were satisfied with the length of visit, and 90% were satisfied with the overall experience.

Patient preferences – Compared to office visits, most patients found telemedicine equal or superior in several areas. Preference to utilize telemedicine in the future was dependent on the nature of the complaint, length of their drive and their schedule.

Conclusions: *Patients reported high levels of satisfaction and a willingness to engage with telemedicine visits. To minimize future technical disruptions, we offer mock telehealth visits before their scheduled appointment and improved our clinicians' work flow.*

Key Words: telemedicine, COVID-19 pandemic, urology

Introduction

Prior to the COVID-19 pandemic, telehealth was utilized for healthcare delivery to remote areas, psychiatric or dermatologic office visits, and retail minute clinics.[1,2] Use in urology has been primarily in the context of providing care to prison populations, within the Veteran's Affairs system, and it has shown promise in the postoperative pediatric population.[3-5] Barriers to widespread use included payer restrictions, lack of reimbursement due to inability to perform a detailed physical exam, expense of reliable and secure video platforms, skepticism about adopting new technology, and concerns over medical-legal liability.[6-8] The COVID-19 pandemic accelerated the wide spread use of telemedicine to minimize exposure through in-office visits. Multiple legislative actions allowed this to happen, which included waiving restrictions on telemedicine services for Medicare Part B services. This allowed patients from anywhere (not just those residing in a Healthcare Professional Shortage area) to interact with clinicians without leaving their home.[7,9,10]

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With our healthcare system's rapid adoption of the telemedicine platform, we sought to evaluate urology patients' satisfaction with telemedicine, to examine patient preferences, and to identify opportunities for improvement in telemedicine readiness, access, and quality of care. Better understanding of these issues may shed light on ways to improve telemedicine so it can be effectively utilized in the future beyond the pandemic.

Materials and methods

Surveys were developed by our team and reviewed by a third party for readability and overall content prior to implementation. Survey questions included patient demographics, telemedicine modalities and logistics, type of visit, chief complaint, wait times, preparation, and overall satisfaction. Patients were asked to compare in-person doctors' visits to their telehealth experience with regard to wait times, patient understanding of care instructions and information provided, their clinician's ability to demonstrate compassion, quality of care and their overall visit experience. Responses were recorded using a 5-point Likert scale.

A total of 285 adult urology patients ages 18 and over who completed at least one telemedicine visit from September to December 2020 were selected at random. Telemedicine visits could include new patient or follow up visits. A paper survey was disseminated by mail on 3/15/2021. Surveys could be returned by mail or completed electronically using a link provided. Reminder postcards were mailed on 4/19/2021. Patients who had not completed the survey by June 2021 were contacted by phone to follow up. All respondents who returned the survey were compensated with a $15 gift card.

Analysis

Descriptive statistics were used to describe and summarize the characteristics of the study sample, including means, medians and frequencies for all relevant variables. Statistical analysis was performed using Microsoft Excel. This study has been reviewed by and received institutional review board (IRB) approval by the University of Rochester. IRB Approval #: 00005907.

Results

Patient demographics

Seventy-six patients completed the survey (response rate 27%). Patient demographics are displayed in Table 1. Median age range was 70-79 years. Ninety-

TABLE 1. **Patient demographics. Results are based on patient responses**

Age (years)	%
18-29	1.4
30-39	4.1
40-49	1.4
50-59	13.5
60-69	28.4
70-79	36.5
80+	14.9
Gender	
Male	73.0
Female	27.0
Transgender	0
Non-binary	0
Race	
White	94.6
African American	2.7
Asian	1.4
Hispanic or Latino	0
American Indian	0
Alaskan Native	0
Native Hawaiian or Pacific Islander	0
Other	0
Prefer not to answer	1.4
Highest level of education completed	
Less than high school	1.4
High school	28.4
Post-secondary certificate	4.1
Associate's degree	13.5
Bachelor's degree	25.7
Post-graduate degree	27.1
Type of health insurance	
Private insurance	39.2
Medicaid	2.7
Medicare	56.8
None	0
Prefer not to answer	1.4
Distance lived from urology clinician's office (minutes)	
< 20	32.4
20-40	43.2
40-60	13.5
60-120	8.1
> 120	2.7
Medical comorbidities	
Diabetes	20.0
High blood pressure	61.5

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TABLE 1 (cont'd). **Patient demographics. Results are based on patient responses**

Medical comorbidities	
Diabetes	20.0
High blood pressure	61.5
Prior heart attack	7.7
Congestive heart failure	3.1
Coronary artery disease	10.8
Prior stroke	4.6
Asthma	9.2
Chronic obstructive pulmonary disease	7.7
Chronic lung disease such as cystic fibrosis or pulmonary fibrosis	1.5
Brain or nervous system conditions	7.7
Obesity	26.2
Chronic kidney disease	15.4
Solid organ transplant	0
Current smoker	4.6
Sickle cell disease	0
Weakened immune system from medication such as chemotherapy or steroids, or HIV	0
Liver disease	3.1
Prefer not to answer	7.7

five percent of respondents were white and 73% were males. Twenty-four percent lived more than 40 minutes away from the office. Fifty-two percent of respondents reported having a bachelor's degree or higher, while 28% reported high school as their highest degree obtained. All respondents had health insurance. The most common medical comorbidities of the respondents were high blood pressure (62%) and obesity (26%).

Readiness

To prepare for the visit, many patients (49%) reported having read the provided instructions and 11% having downloaded the platform software, Figure 1. Ninety-one percent thought they were adequately prepared and 82% were either satisfied or very satisfied with the ease of set up. Respondents who thought their preparation was inadequate suggested that providing more detailed instructions and/or setting up a mock telemedicine visit would have been helpful.

Access

Forty-seven percent of respondents had a video visit, 48% had a phone call only visit, and 6% marked other as their platform for conducting their visit. For those who used a video visit, 70% used Zoom, while 30% did not know which platform they used. Most respondents (84%) did not have difficulty accessing the visit. Of those 11 respondents who reported a difficulty, most attributed it to the clinician having difficulties and their lack of familiarity with the technology, Figure 2. Ninety-eight percent of patients were either satisfied or very satisfied with the voice and visual quality of their telehealth visit, respectively.

Quality of care

Of those who used video visits (n = 34), 9% were new patient visits, 88% were established patients, and 3% were postoperative visits. Of the telephone only visits (n = 35), 17% were new patient visits, 71% were established patient visits, 9% were postoperative visits, and 3% were unsure. Patients were seen for a wide spectrum of chief complaints, most commonly urologic cancer (24%) and kidney stones (16%), Figure 3. Wait times were short. Forty-six percent waited less than 5 minutes, 28% up to 15 minutes, 14% more than 15 minutes, and 12.5% preferred not to answer. Telemedicine visits lasted a variable length of time: one third of the respondents had a 10-20 minute visit, another third had a 20-30 minute visit, and the rest reported visits lasting 30-45 minutes. Using a 10-point scale to measure the overall telemedicine experience, only 12% of respondents rated their experience as low (≤ 5), while almost 80% rated it as very good (≥ 8).

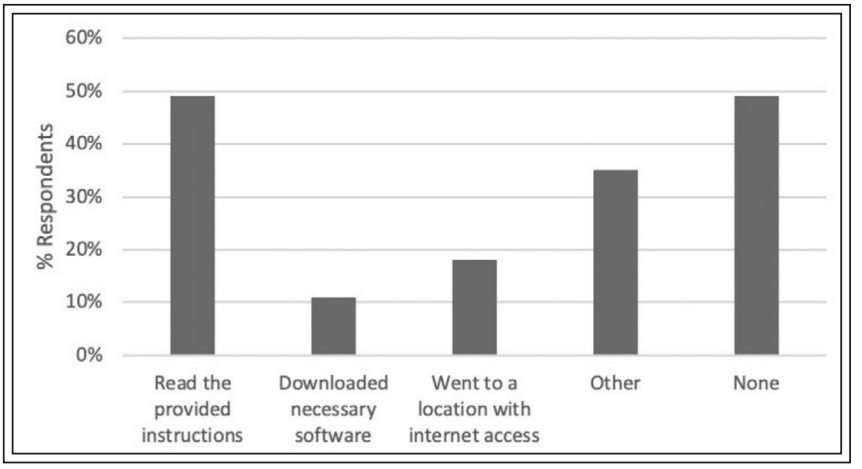

Figure 1. Steps taken by patients to prepare for their telemedicine visit prior to the appointment (n = 57 respondents).

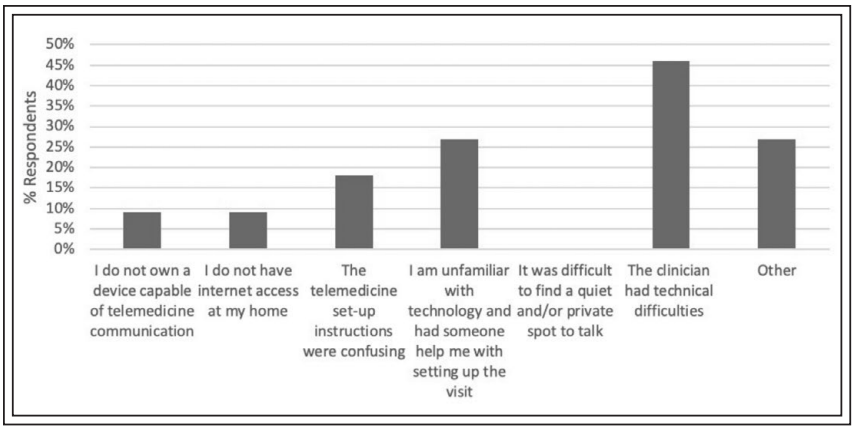

Figure 2. Challenges cited in patients who experienced difficulty with their telemedicine visit. In all (n = 11 respondents answered this question).

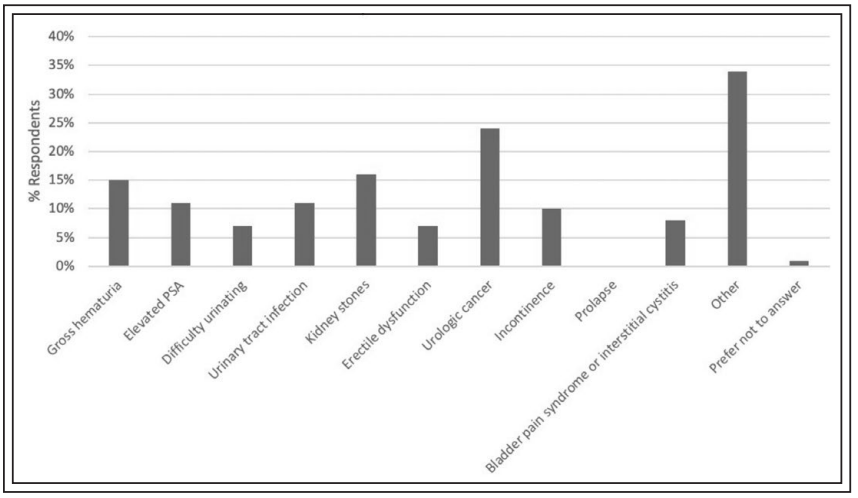

Figure 3. Chief complaint of telehealth visit as reported by the patient (n = 74 respondents answered this question).

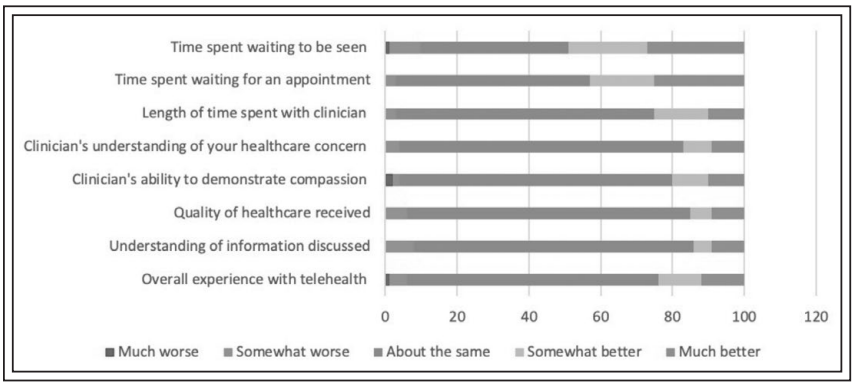

Figure 4. Patient responses comparing their telehealth visit to in-person visits. Responses are based on a 5-point Likert scale.

Patient preferences

Overall, patients found telemedicine to be equal or superior to office visits in most areas, Figure 4. They found telehealth visits to be comparable in their understanding of their discussion with the clinicians, the quality of care, level of compassion the clinician demonstrated, the clinician's understanding of the patient's medical needs, and the length of time spent with the clinician. Patients found telehealth to be superior in wait times both to get an appointment and to see the clinician on the day of the appointment. Despite this positive experience, 35% would prefer to see a clinician in person. These patients said they would choose to have an in-person visit because they would like to be examined and thought the quality of care would be higher. Table 2 demonstrates telehealth preferences based on age group. Patients who preferred to use telehealth again over an in-person visit said this because it was more convenient for them (88%), it saves travel time (88%), it saves money on travel and parking expenses (25%), they enjoy the comfort of their home for their visit (25%), they are concerned about safety of coming to an in-person visit due to COVID-19 (38%) or they do not feel a physical examination is an important part of their visit (63%). However, many patients (54%) said the decision to have a telehealth visit again would be dependent on the nature of the complaint, length of their drive, and their personal schedule. Types of problems for which patients said they would use telehealth to see a clinician again include blood in the urine, elevated PSA, difficulty with urination, urinary tract infections, incontinence, and bladder or pelvic pain syndromes. Interestingly, no patients selected prolapse nor kidney stones as a medical problem

TABLE 2. **Contingency table demonstrating the frequency for which each age-group selected a preferred modality for future clinician visits (n = 74). Options they chose from were: in-person visits, using telemedicine visits, or it depends**

	Preferences for future visits:				Total
Age (yrs)	**In-person**	**Using telemedicine**	**It depends**	**Did not answer**	
18-29	0	0	1	0	1
30-39	0	0	3	0	3
40-49	0	0	1	0	1
50-59	1	1	8	0	10
60-69	9	2	10	0	21
70-79	10	5	12	0	27
≥ 80	5	0	5	1	11
Total	25	8	40	1	74

for which they would be willing to be seen over a telehealth platform.

Discussion

In this study we present a single institution's experience with telehealth during the COVID-19 pandemic demonstrating a high patient satisfaction rate of 90%. This is unsurprising given many other studies across the world have demonstrated similar patient satisfaction levels. Pinar et al, based on a survey conducted in March 2020 in France, cited a positive experience with teleconsultation in 84% of patients.[11] Many patients in our study demonstrated a willingness to engage with telemedicine visits again in the future. However, compared to another study by Luse et al, our patients' desire to engage with telemedicine again was not as robust.[12] This may be due to the fact that patients in our study sample were considerably older. While Luse et al study covered the very early pandemic period, our study period covered a longer time-window, perhaps showing that the early enthusiasm for telehealth has also diminished over time.

Telehealth may offer several benefits to patients and healthcare systems.[13] Telemedicine allows for a significant time and cost savings and increases access to care.[14] A urologist-based survey just prior to the COVID-19 pandemic cites both a lack of infrastructure and lack of reimbursement as major barriers to telemedicine implementation.[15] Now that legislation providing reimbursement for video visits has broken the perceived barriers to establishing a widely used telehealth system, we should see significant cost savings – both financial and opportunity costs – due to decreased transportation, as well as decreased patient time off work.[16,17] Further, patients may have increased access to specialized healthcare at tertiary centers, where often distance alone acted as a barrier to receiving care.[14] Despite new implementation of telehealth inquiring costs for equipment and software updates, the cost of healthcare has been shown to decrease with the utilization of telemedicine.[13,18] Despite added benefits and ease of access, telemedicine may still exacerbate health disparities and we need to perform future studies and outreach programs to equalize access to the rural and urban poor populations.[19]

A popular opinion regarding the use of telemedicine is not a question of if you will use it, but a question of when.[8] Our findings demonstrate that patients are open to using telehealth for a multitude of diseases due to convenience and cost benefits. Further there is evidence in our study that patients have used Zoom platforms prior to their telehealth visit, as 48% reportedly used Zoom for their visit but only 8% had to download the software. A recent study of telehealth among urology clinicians concurred that a broad variety of urologic complaints lend themselves beneficial for virtual follow up visits, although may not be equally applicable for new patient visits (Gochenaur et al, unpublished data). In this study, clinicians listed erectile dysfunction, kidney stones, and hematuria as the most suitable chief complaints for which to use telehealth. On the other hand, the majority of chief complaints that patients in our study thought were suitable for telehealth were blood in the urine, elevated

PSA, difficulty urinating and urinary tract infections, while no patients thought kidney stones could be managed using telehealth.

Several care pathways have been suggested for efficient use of telehealth, which should be widely implemented.[18,20] For example, in patients with gross or microscopic hematuria, Safir et al describes using telemedicine platforms to perform a history of present illness and then performing imaging studies as indicated followed by scheduling the patient for an in-office cystoscopy where a physical exam is also performed. This enabled all patients to be evaluated within a 30-day window and had high patient satisfaction rates of 9.2/10.[20] Gadzinski et al also suggest using telehealth visits initially to confirm history and to order additional diagnostic testing as well as for patient counseling. This is then followed by in-person visits for physical exams and additional in-office procedures as needed.[18]

Since telehealth use will likely continue beyond the pandemic, we offer some recommendations to improve telehealth delivery based on our study. To ensure patient readiness for their visits, institutions should prepare easy to read patient instructions to access a telemedicine visit. More extensive support in the form of video demonstrations on the use of telehealth software should also be made available for patients to access. In our study, patients reported that access was sometimes more difficult on the clinician's end. In a study of 23 patients using telemedicine, a trained observer noted an average of six disruptions per visit, most of which were interruptions or internet connectivity issues.[21] We expect the ease of telemedicine use and implementation into normal workflow to improve with increased training and utilization of telehealth platforms by all parties. Since this survey, we have implemented a work flow in which the nurse greets the patient virtually in an exam room and troubleshoots any technical difficulties. Then the patient sees the clinician in the same exam room. This saves the clinician from having significant technological disruptions affecting his or her work flow. Further, at the time of patient scheduling, we offer the option of a mock telehealth visit before their scheduled appointment which is performed by our support staff. Additionally, Sosnowski et al recommended that telehealth visits be conducted only in professional settings, assuring that confidentiality is maintained.[22]

Despite the movement to the telehealth platform, perceived quality of care provided by physicians seemed not to have suffered. Additionally, in our study patients report they spent an equivalent amount of time with their physicians as they do in in-office visits. Further, arguing against the skepticism that clinicians may not be able to build a proper rapport with patients on virtual visits, our study suggests that "webside" manner is equally as compassionate as the bedside manner.[23] Despite this finding, clinicians should increase focus on further establishing a rapport and demonstrating empathy to enhance the quality of patient care. Continued implementation will allow clinicians to perfect this mode of healthcare delivery increasing access and convenience for patients while maintaining state-of-the-art, evidence driven, patient centered care.

Limitations

Our study has limitations. First, as with any survey data the risk of recall bias may alter perceptions of the event in question. However, since we were interested in lasting opinions of telehealth over a period of time, this limitation is less of a concern. Response bias is also a concern, but our results suggest similar distribution of the satisfied and unsatisfied respondents having participated in the study. Though the patient demographics are largely representative of the patient population we serve, it is not reflective of the general population, thus results, especially in regards to ease of use, may not be generalizable. However, it is imperative to share these findings when the feasibility and long term plan for telehealth implementation is at the forefront of legislative advocacy committee discussions.

Conclusions

Patients report high levels of satisfaction and a willingness to engage with telemedicine visits. Telehealth visits will remain an integral part of our health delivery for a wide variety of urologic visits. Ways in which we can improve patient readiness for their visit is providing easy instructions and an option for a mock-visit to learn the software. We expect ease of use to improve with increased training and utilization of the telehealth software. Future studies may wish to explore differences in patient outcomes for telehealth versus in-person visits. Further studies and outreach programs are needed to understand how to equalize access to the rural and urban poor. □

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