

What are COVID-19 Patient Preferences for and Experiences with Virtual Care? Findings From a Scoping Review

Journal of Patient Experience
Volume 10: 1-9
© The Author(s) 2023
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/23743735231215603
journals.sagepub.com/home/jpx



Leinic Chung-Lee, MN¹ , Cristina Catalo, PhD¹ ,
and Ava Meade, BScN¹ 

Abstract

Virtual care became a routine method for healthcare delivery during the coronavirus disease 2019 (COVID-19) pandemic. Patient preferences are central to delivering patient-centered and high-quality care. The pandemic challenged healthcare organizations and providers to quickly deliver safe healthcare to COVID-19 patients. This resulted in varied implementation of virtual healthcare services. With an increased focus on remote COVID-19 monitoring, little research has examined patient experiences with virtual care. This scoping review examined patient experiences and preferences with virtual care among community-based self-isolating COVID-19 patients. We identified a paucity of literature related to patient experiences and preferences regarding virtual care. Few articles focused on patient experiences and preferences as a primary outcome. Our research suggests that (1) patients view virtual care positively and to be feasible to use; (2) patient access to technology impacts patient satisfaction and experiences; and (3) to enhance the patient experience, healthcare organizations and providers need to support patient use of technology and resolve technology-related issues. When planning virtual care modalities, purposeful consideration of patient experiences and preferences is needed to deliver quality patient-centered care.

Keywords

virtual care, telemedicine, digital health, COVID-19, patient experience, patient preference

Introduction

The declaration of the coronavirus disease 2019 (COVID-19) pandemic resulted in the large-scale implementation of public health restrictions across the globe.^{1,2} While virtual care was slow to take effect in healthcare, the pandemic gave rise to opportunities to swiftly implement virtual services. Many countries such as Canada, Australia, and the United States, updated policies to facilitate the use of telephone, video, and other modalities for virtual care.³⁻⁵ As with other infectious diseases of public health significance, COVID-19 case management and contact tracing were conducted.⁶ At the height of the restrictions, case and contact management focused heavily on self-isolation. This direction, however, led to a gap in healthcare access among newly diagnosed self-isolating COVID-19 patients. While these patients may not have required hospital care, support and other interventions were still warranted during the isolation period.⁷ Healthcare providers and organizations discovered that regular monitoring for clinical deterioration could be delivered safely and effectively to COVID-19 patients remotely.⁸ Community-based COVID-19 virtual care

emerged to safely support illness recovery and patient monitoring; however, there was great variation in how virtual interventions were delivered and by whom.⁹ These virtual programs utilized a wide range of technology, from simple telehealth to leveraging wearable technologies and portals. Staffing models for these programs ranged from one type of provider to large interdisciplinary teams. The pandemic-driven approach and pivoting to virtual modalities of care may have deviated away from patients being at the center of the care. Little is known about the COVID-19 patient experience related to access to care during the acute illness period or whether patient preferences for modalities of care were accounted for in the delivery of virtual community COVID-19 care.

¹ Toronto Metropolitan University, Toronto, Canada

Corresponding Author:

Leinic Chung-Lee, Toronto Metropolitan University, 350 Victoria Street, Toronto, Ontario, M5B 2K3, Canada.
Email: leinic.chung@torontomu.ca



Patient experience has been studied widely, and, traditionally, in the context of in-person care. A systematic review affirmed that there are positive associations between patient experience and health outcomes, adherence to treatments, clinical effectiveness, and patient safety across multiple practice areas.¹⁰ A recent article by Ramamoorthi et al¹¹ identified that patient experience is influenced by how much autonomy the patient has to select which virtual modalities to receive care from and that providers be involved in providing technological support to meet the patient's level of digital literacy. Therefore, it is critical to ensure that the patient experience is at the forefront when designing, implementing, and evaluating high-quality healthcare to achieve optimal patient outcomes.

The literature offers multiple definitions and interpretations of patient experience. Wolf et al¹² posit several key concepts underpinning the patient experience. These include the notions that: (1) patient experience is cumulative; (2) patient experience is not simply patient satisfaction; (3) the expectations patients have before and after their encounters with healthcare influence their experiences; and (4) individualized care involves customizing care based on specific needs while including patients as partners. Most recently, Wolf et al's¹³ framework was expanded to not only include care providers but also team members, care partners, organizations and workforce, the communities, and the larger healthcare system. This promotes a widened view that accounts for the interplay of relationships at a systems level.¹³

COVID-19 restrictions brought in creative deployment of technologies to maintain the human experience, albeit remotely.¹⁴ While the link between patient experience and outcomes has been established for traditional face-to-face care, less is known about how patients experience virtual care, especially within the context of the COVID-19 pandemic.^{15,16} Emerging findings from research in virtual care patient experiences suggest similar findings to that of in-person care. For example, patients receiving virtual care have improved outcomes related to adherence to treatment¹⁷ and express an overall positive experience pertaining to increased convenience and time savings, related to the elimination of travel and physical contact.^{15,16,18,19} However, patients report negative experiences when there were long wait times in the virtual wait room, when they felt rushed during the appointment,¹⁵ and when the provider was late.¹⁸ Additionally, communication gaps such as a lack of eye contact or a failure to develop a rapport during the consultation, were found to negatively influence the patient's virtual care experience.^{15,18} Efforts should be made to maintain presence throughout the therapeutic encounter in the virtual environment so that the patient does not perceive the provider as inattentive.²⁰

Although not directly reported as an outcome measure, patient preferences are discussed as part of the evaluation of patient experience in some studies on virtual care services. In an analysis of outpatient clinic feedback for specialist services, researchers found that the majority of the virtual

appointments were by telephone rather than video; additionally, some patients indicated that telephone modality was acceptable but voiced a preference for face-to-face consultations while other patients prefer the virtual route in lieu of going in-person.¹⁸ In another study, patients advised that face-to-face encounters would be preferred and seen as more appropriate when a healthcare provider meets a new patient for the first visit, communicates a diagnosis that requires sensitivity, or assesses conditions that necessitate in-person interaction.¹⁶ For virtual cancer care, researchers demonstrated that patients want a choice of modality.²¹ Considering language barriers, digital literacy and comfort, or other barriers, patients should be given the opportunity to express their preferences. For those who can engage in virtual care, a choice of asynchronous communication platform, such as text messaging, has been shown to take precedence over a choice for video modality in a study on virtual primary care.²² Finally, the experiences of patients may vary depending on the virtual modality chosen,¹⁵ suggesting that the patient experience may be shaped by the preference for modality. The state of research on patient preferences for modality of healthcare is nascent, particularly for those who are self-isolating for a positive COVID-19 result.

Purpose

We conducted a scoping review to better understand how virtual modalities were used for COVID-19 patients who were self-isolating in the community.²³ This paper took this scoping review data and examined the extent to which patient experiences and preferences were considered for community-based self-isolating COVID-19 patients who received virtual care. Findings about the type and dose of virtual care, range of technologies employed, disciplines of healthcare providers, and patient clinical outcomes were reported separately.⁹ This paper examined all included articles from the scoping review for their examination of COVID-19 patient experiences and preferences as they related to virtual care.

Methods

Scoping review methods recommended by the Joanna Briggs Institute²⁴ and the checklist for Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA-ScR) were followed.²⁵ The complete methods for the scoping review were published separately as a protocol.²³ In consultation with a health librarian, a comprehensive search strategy was developed. Four bibliographic databases (CINAHL, Medline, Emcare, and Cochrane Database of Systematic Reviews) were searched between January 30, 2022 and February 3, 2022 for literature published in English between 2020 and 2022. Google Scholar and reference lists of included articles were searched. Two levels of screening using eligibility criteria were completed independently by 2 reviewers (LCL, CC). References and screening

were managed using the DistillerSR software. Articles that met all inclusion criteria were reviewed in-depth. Data relevant to the scoping review's variables of interest, including patient experience and preferences, were extracted, analyzed, and synthesized. Consultation with the institution's Research Ethics Board was completed; this study did not involve human or animal participants and ethics approval was not required.

Results

In total, 755 unique records were screened. Following 2 levels of screening, 19 articles meeting the eligibility criteria were included.²³ Table 1 presents an outline of the included articles and whether patient experiences and/or preferences were addressed. Only 1 study indicated patient experience as a primary outcome. Four of the included studies discussed the patient experience,²⁶⁻²⁹ with 1 having a patient population with a specific comorbidity of cancer.²⁶ None of the

included studies reported patient preference as a primary outcome. One study assessed patient preferences.²⁶ Three studies that offered more than 1 modality of virtual COVID-19 care (such as telephone and video visits) briefly touched on findings that were relevant to understanding patient preferences. They alluded to patient preference by examining either feasibility of the virtual modality, safety of the modality, reported dissatisfaction with not having face-to-face care or how well the virtual care intervention was adopted by patients.^{28,30,31}

Patient Experiences

Overall, findings across studies demonstrated that patients had positive experiences with the virtual care. Where Likert scale ratings were used, reported rates ranged from 88.7% of combined good or very good⁴¹ to 61.7% very good and 34.8% good.²⁸ Patients voiced that participating in the

Table 1. Outline of the Included Articles and Variables of Patient Experiences and/or Preferences.

Authors	Year	Country	Sample size	Was patient experience evaluated? (Yes/No)	Was patient experience the primary outcome? (Yes/No)	Was patient preference for modality evaluated? (Yes/No)	Was patient preference the primary outcome? (Yes/No)
Agarwal et al. ³⁰	2021	Canada	n = 97	No	No	No (note this study did not focus on patient preference but did focus on feasibility, safety and adoption of the virtual care modality)	No
Bell et al. ³²	2021	UK	n = 83 (pilot) n = 47 (validation)	No	No	No	No
Clarke et al. ³³	2021	Australia	n = 850	No	No	No	No
Coffey et al. ³⁴	2021	USA	n = 7074	No	No	No	No
Ferrua et al. ²⁶	2021	France	n = 129	Yes	No	Yes	No
Ferry et al. ³⁵	2021	Australia	n = 223	No	No	No	No
Hutchings et al. ³⁶	2021	Australia	n = 162	No (but alluded to patient experience)	No	No	No
Lam et al. ³¹	2020	Canada	n = 50	No	No	No (but alluded to patient preferences)	No
Malwade et al. ³⁷	2021	India	n = 318	No	No	No	No
Micallef et al. ³⁸	2021	Australia	n = 158	No	No	No	No
Michaud et al. ³⁹	2021	Canada	n = 46	No (alluded to the technical experience)	No	No	No
Pimlott et al. ⁴⁰	2021	Canada	n = 73	No	No	No	No
Raffan et al. ⁴¹	2021	Australia	n = 265	Yes	Yes	No	No
Reforma et al. ²⁷	2020	USA	n = 135	No	No	No	No
Schultz et al. ²⁸	2021	Australia	n = 238	Yes	No	No (but alluded to patient preferences)	No
Swift et al. ⁴²	2021	UK	n = 65	No	No	No	No
Wong et al. ⁴³	2022	USA	n = 296	No	No	No	No
Wurzer et al. ²⁹	2021	Germany	n = 153	Yes	No	No	No
Xu et al. ⁴⁴	2020	China	n = 48	No	No	No	No

virtual care improved their well-being,^{29,41} appreciated that their voices were heard,²⁶ and felt reassured, confident, and safe knowing that they were being monitored.^{26,29,41} With the wearable device virtual program, the majority of hospitalized patients believed that having remote monitoring improved their chances of recovery.²⁹

Frequency and Time-Related Experiences. In the study of COVID-19 care for cancer patients, virtual care was implemented with a combination of a digital application and telephone calls made by Nurse Navigators, nurses dedicated to supporting oncological patients.²⁶ Symptoms were tracked through the application and remotely monitored by the Nurse Navigator, with additional telephone access to the Nurse Navigator daily. Participants expressed feeling that the frequency of contact was adequate.²⁶ Similarly, in the study exploring patient experiences as a primary outcome, video encounters with nurses were scheduled for each day, twice daily.⁴¹ Individuals who were deemed stable to self-isolate participated in a video-based virtual care program. Over 85% of participants reported that telephone call wait-times were acceptable.

Technology. Experiences related to the technology used were described in 3 of the 4 studies^{26,29,41}; the other included study utilized telephone modality.²⁸ Where a digital application was implemented, the user experience was reported.²⁶ This application was originally designed for a cancer program and expanded to include COVID-19 care for enrolled cancer patients diagnosed with COVID-19. A small percentage of responding users of the application found that it was constraining; however, approximately 50% indicated that it was easy to use. Where a video platform was used in the study evaluating the COVID-19 patient experience, over 95% of the participants felt that the video system was easy to use, while over 85% felt that the technologies (including wearables for patients deemed high-risk for clinical deterioration) employed in the virtual program contributed to improving their access to care.⁴¹ Patients found that the level of consistency or inconsistency of the technology was a weakness of the program.

Vital sign data collected and monitored using wearable equipment such as pulse oximeters and temperature patches were also used in 2 studies.^{29,41} Among patients with wearable devices, the majority felt that they were easy to use.⁴¹ This was echoed by another study using an in-ear wearable device for automated biosignal data transmission.²⁹ However, while all participants reported ease of use of the device, the research team could not report on the comfort of the device, stating there was a wide range of ratings related to comfort.

No analysis comparing technology-related experiences with the virtual care provided across socio-demographic characteristics of the samples was reported among these 4 studies. In the French study of remote COVID-19 care for cancer patients, some limited descriptive statistics, such as

mean age, were presented by phone use versus digital app use²⁶; however, comparative analyses that account for social determinants of health and digital experiences were not reported.

Virtual Interaction with Healthcare Providers. All interventions in the studies included some contact with a healthcare provider, although the frequency of communication, type of provider, and platforms varied. Raffan et al⁴¹ found that over 90% of participants understood the health teachings and reported that their needs were met. The clinician's approach was further recognized as a strength of the virtual model of care, with close to 3-quarters of the participants voicing that they were involved with the decision-making about their care and treatment plan.

It is noteworthy to point to a difference found between the experiences of individuals isolating in their own homes versus those at a quarantine hotel. Patients who were home were significantly more likely to report a positive experience than those isolating at the quarantine hotel.⁴¹ Patients at the hotel reported lower levels of feeling involved in making decisions about their care or that the technology contributed to improving their access to care. Additionally, some negative patient experiences and areas for improvement were also reported, including receiving conflicting information from different care providers and receiving repetitive information over all the interactions.⁴¹ Table 2 summarizes key findings on patient experiences across the studies addressing the patient experience.

Patient Preferences

Patient preferences for modality of care were not directly reported as a primary outcome in any of the included studies. One study reported on preference,²⁶ while other studies briefly described findings related to virtual care use and technology models from which inferences about patient preferences could be made. In the Nurse Navigator-led COVID-19 care study, patients who chose to utilize the digital application had a lower number of calls compared to participants who solely used telephone calls.²⁶ In addition, it was reported that 28 participants did not download the digital application, with indication that these participants preferred to have human contact.²⁶

Two studies made video and telephone consultations available for patients.^{30,31} Although patient preference was not specifically identified as an outcome, there were aspects relevant to patient preferences. Despite the planned use of a telemedicine network's video platform study, Lam et al³¹ found that the video modality for assessment with an infectious disease physician was only used by approximately two-thirds of patients. The remaining patients chose to use telephone modality. Similarly, patients enrolled in a family medicine-led interdisciplinary COVID-19 remote care program offered video and telephone visits.³⁰ Under two-thirds of all visits were booked as video-based appointments.

Table 2. Summary of Findings on Patient Experiences.

Authors and year	Patient experiences
Ferrua et al. ²⁶	<ul style="list-style-type: none"> Experiences were explored based on: expectations of the program, benefits of the program, Nurse Navigator, and the digital app 96.7% of responding patients felt the nursing call frequency was adequate Majority of the patients felt reassured about their physical condition and cancer, and appreciated that they were heard A small percentage of responding app users found that the app was constraining, while approximately 50% found the app to be easy to use
Raffan et al. ⁴¹	<ul style="list-style-type: none"> App users were overall satisfied with using the app and expressed positive interest Overall positive experience 88.7% reported care was good or very good and 92.5% reported that the treatment and care helped 73.1% felt that they were involved with decision-making about their care and treatment 86.7% reported the wait time for calls to be answered was about right 93.9% reported their nurses met their needs always or mostly, and that 97.3% reported that they always or sometimes could understand what the nurses explained 86.4% felt the technologies that were used improved their access to care 95.4% felt video system was easy to use and 94.3% reported confidence at home since being monitored daily Of those with wearable devices, majority felt they were easy to use Patients isolating at home were more likely to report positive experiences with the virtual care than those isolating in the hotel Strengths: Feeling reassured and confident in having their symptoms continuously monitored; liked the model of care (with visual calls) and approach of the clinician, as well as the rapport with the nurses who were competent, positive, empathetic, and patient-centered Weaknesses: Conflicting information at discharge; repetitive call content, reliability and consistency of the technology and more
Schultz et al. ²⁸	<ul style="list-style-type: none"> 61.7% of responding participants rated their virtual ward experience as very good, 34.8% good Some patients reported they were dissatisfied with not having in-person care for assessments and follow-up
Wurzer et al. ²⁹	<ul style="list-style-type: none"> All participants reported that the device was easy to use Comfort of the wearable device was unclear, with range of rating on comfort Majority of the participants reported improvement in their well-being from participation 91% of the participants reported strongly feeling safe during their participation in the study Of the participants who were hospitalized, the majority indicated that they believed the virtual program improved their odds of recovery through the monitoring and escalation process

Table 3. Highlights of Findings Relevant to Patient Preferences.

Authors	Patient preferences
Lam et al. ³¹	<ul style="list-style-type: none"> 64% of all patients were assessed virtually by video modality
Agarwal et al. ³⁰	<ul style="list-style-type: none"> 62% of all virtual visits were conducted through video modality
Ferrua et al. ²⁶	<ul style="list-style-type: none"> Average of 6.2 calls for digital app users versus 13.9 calls for patients who participated in telephone model only 28 participants did not download the app, with an indication of not being familiar with digital technology or preferred having in-person contact as the most common reasons for not using the app Three participants had the app but did not follow through, and switched to telephone model
Schultz et al. ²⁸	<ul style="list-style-type: none"> Some patients reported being dissatisfied with not having in-person care

Additionally, 1 article describing the implementation of a virtual ward reported that some patients experienced dissatisfaction with not having face-to-face encounters with a clinician,²⁸ suggesting that some participants may have been

inclined to choose in-person consultations. Table 3 presents highlights of study findings that are relevant to understanding patient preferences.

Discussion

This review calls for narrowing the gap in research on the virtual care patient experience and patient preferences for modalities of care. Of the 19 included articles, only 4 included an assessment of the patient experience, and only 1 evaluated patient preferences. The community-based COVID-19 virtual care literature documented the use of interventions beyond merely monitoring symptoms or clinical outcomes; for example, some studies included peer support,⁴⁴ community resource linkages,^{26,30,43} and psychosocial support.^{26,28,30,36,44} We consider patient preferences to include consideration of patient experience, to go beyond just patient satisfaction, and to provide individualized and customized care that meets patient needs and expectations.^{12,13} This means a patient-centered perspective for a COVID-19 patient would look at healthcare services holistically while offering tangible supports like grocery assistance or prescription delivery to those who must isolate, as was

offered in 1 study.⁴³ Evaluating the experiences of the patients with these extended virtual care models would contribute to a better understanding of the isolating COVID-19 patient experiences.

Our study identified that patient experiences and patient preferences were not set as primary outcomes across COVID-19 virtual care research. Despite several included papers outlining virtual care as part of quality improvement initiatives, few studies discussed patient experiences, and fewer touched on patient preferences in their investigation of virtual COVID-19 care. There is great promise in virtual care facilitating high-quality care for community-based COVID-19 patients during the active phase of illness, yet the research thus far has been scarce in leveraging patient experience narratives to evaluate health outcomes and quality of the virtual care. Healthcare system quality comprises the dimensions of effectiveness, efficiency, patient-centeredness, equity, and timeliness as defined by the Institute of Medicine.⁴⁵ Improving the quality of care must be driven by appreciating the interconnectedness of all pillars of quality. Patient experience is intimately intertwined with all other dimensions of quality,⁴⁶ which synergistically interacts to impact individual, family, community, and population health outcomes. Ultimately, patients themselves experience the care that they receive; this experience begins at the point of care-seeking, prior to the encounter with the provider. When appointment type is solely driven by the provider or funding policies, rather than by patient preference, patients may experience pain points in their healthcare journey.¹¹ While there are opportunities for virtual care to improve clinically focused outcomes, particularly when the communicability of infectious diseases is concerned, researchers are urged to invest efforts to include how patients perceive their access and experiences of virtual care. To design patient-centered care for enhancing experiences and respecting preferences, research should examine patient experiences in relation to all dimensions of quality of care.^{10,47}

Findings from the included studies generally point to overall positive patient experiences with virtual COVID-19 care. The delivery of virtual COVID-19 care was mostly facilitated by digital technologies. How patient experiences were reported and discussed in relation to technology varied. As 1 study utilized in-ear wearable technology, the physical comfort of the deployed devices is an important attribute to assess.²⁹ Likewise, when utilizing vital sign equipment and other wearable technologies such as temperature patches or blood pressure cuffs, the patients' experience related to the equipment, convenience, and comfort should be assessed. Both Ferrua et al²⁶ and Raffan et al⁴¹ reported on participants' perceptions of the ease of use or reliability of the platforms. However, there was a notable difference in the ratings. In contrast to Raffan et al's⁴¹ study, where nearly all participants found the video system to be easy to use, only half of the participants in Ferrua et al's²⁶ study reported that the mobile app was easy to use.²⁶ This is not a simple comparison; rather, this points to the varied

technologies deployed for use. Other remote COVID-19 monitoring studies briefly touched upon the need for technical support by way of allowing participants to contact the research team for assistance or having pre-downloaded apps on devices to minimize technical steps for the patient.^{36,39} Prior to the pandemic, privacy challenges, technological limitations and digital health literacy were generally recognized as barriers to virtual care.⁴⁸ As healthcare continues to leverage digital assets and evolve, understanding technology-related factors that influence patient preferences and experiences becomes increasingly critical. Our review points to a vast gap in analyses of access to technology, digital literacy, and patient's virtual care experiences across socio-demographic characteristics within the studies' samples. The inclusion of patients in the design of new products and digital health solutions is generally scant, and research dedicated to the user's experience in the design of digital health assets is lacking.⁴⁹

Further to the varied nature of the technology implemented, there was also heterogeneity in modalities of care. For programs offering more than 1 modality (such as telephone and video), exploring factors influencing patient choices of 1 modality over another would have been valuable. Understanding the determinants of patient preferences for modalities of care, and the circumstances that shape the choices would allow virtual care to better complement in-person care. Although stay-at-home orders and legislated quarantine requirements specific for COVID-19 have lifted, and public health has shifted to a "living with COVID-19" approach in many countries across the world,^{50,51} being responsive to the needs of individuals with any infectious disease is prudent for controlling transmission and ensuring provision of care. Besides communicable diseases of public health significance, healthcare providers would benefit from knowledge about how patients experience virtual care, what facilitates and hinders virtual care access, and how to co-create safe and equitable care with patients and communities.⁵² Important lessons learned from the COVID-19 emergency response should urge clinicians, researchers, and policy-makers to mind the virtual care health equity gap.⁵²

Limitations

This scoping review is 1 of the first to examine patient preferences for virtual care among those isolating in the community for COVID-19. A significant challenge across the literature was its lower methodologic quality. Much of what was published at the time of our review was produced quickly to highlight new and innovative virtual services that were created in response to the isolation protocols and lockdowns across jurisdictions. These virtual programs were efforts to respond to a clinical need as opposed to formally planned and structured research endeavors. As a result, we have a series of studies that show promising virtual care, but warrant continued study and evaluation

with attention to methodology and rigor. Because these virtual services were in response to a healthcare system need at the time (eg lockdowns), many programs were not created with a focus on patient preferences or experience. As a result, we formulated our own definition of patient preferences (see earlier in the paper) and extrapolated data from our included studies that were based on this definition of patient preferences. Doing this meant that we had to extract data as best as possible related to patient preference and experience when the original authors did not consider this as a primary outcome. More research is needed to understand patient preferences and experiences as primary outcomes for virtual care services and programs offered by healthcare organizations and providers.

Conclusion

Understandably, the patient experience and patient preferences may not have been a priority at the time of the initial virtual COVID-19 care research, as healthcare professionals grappled with being able to stay afloat, particularly during the early waves of the pandemic. There is now a considerable body of literature on healthcare response, virtual modalities, and COVID-19 remote care. With vaccination and pharmaceutical treatments more readily available, and with a stronger understanding of the virus and disease manifestations, further research exploring the patient experience and which modalities of care patients prefer, is needed. This body of knowledge will be applicable beyond COVID-19 care and will be critical to informing clinicians and policy-makers as virtual care normalizes, especially when preparing for future large-scale communicable disease outbreaks.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.




Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

Ethical Approval

This study had ethical review and approval waived. The authors consulted with the institution's Research Ethics Board about the need for ethical review. Ethical review and approval were waived for this scoping review as it did not involve the use of either humans or animals as participants.

ORCID iDs

Leinic Chung-Lee  <https://orcid.org/0000-0003-4643-507X>
Cristina Catallo  <https://orcid.org/0000-0003-4607-7380>
Ava Meade  <https://orcid.org/0009-0007-5174-3380>

References

1. World Health Organization. WHO Director-General's opening remarks at the media briefing on COVID-19-11 March 2020. Site Name. Accessed February 11, 2022. <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19-11-march-2020>
2. Government of Canada. Coronavirus disease (COVID-19): Measures to reduce COVID-19 in your community. Accessed February 11, 2022. <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/prevention-risks/measures-reduce-community.html>
3. Canadian Institute for Health Information. Physician billing codes in response to COVID-19. Accessed April 20, 2021. <https://www.cihi.ca/en/physician-billing-codes-in-response-to-covid-19>
4. Health Resources & Service Administration U.S. Department of Health and Human Services. Policy changes during COVID-19. Accessed April 20, 2022. <https://telehealth.hhs.gov/>
5. Commonwealth of Australia. Permanent telehealth for all Australians. Accessed April 20, 2022. <https://www.health.gov.au/news/permanent-telehealth-for-all-australians>
6. Government of Canada. How to quarantine or isolate at home if you have or may have COVID-19. Accessed February 11, 2022. <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/awareness-resources/quarantine-isolate-home.html>
7. Al-Tawfiq JA, Kheir H, Al-Dakheel T, et al. COVID-19 home monitoring program: healthcare innovation in developing, maintaining, and impacting the outcome of SARS-CoV-2 infected patients. *Travel Med Infect Dis.* 2021;43:102089-10296. doi:10.1016/j.tmaid.2021.102089
8. Adly AS, Adly MS, Adly AS. Telemangement of home-isolated COVID-19 patients using oxygen therapy with noninvasive positive pressure ventilation and physical therapy techniques: randomized clinical trial. *J Med Internet Res.* 2021; 23(4):e23446. doi:10.2196/23446
9. Chung-Lee L, Catallo C. A new approach to digital health? Virtual COVID-19 care: a scoping review. *Digital Health.* 2023;9:1-28. doi:10.1177/20552076231152171
10. Doyle C, Lennox L, Bell D. A systematic review of evidence on the links between patient experience and clinical safety and effectiveness. *BMJ Open.* 2013;3(1):e001570. doi:10.1136/bmjopen-2012-001570
11. Ramamoorthi K, Liu R, Fujioka J, et al. Navigating virtual care services in Ontario urban hospitals, using patient journey mapping. *J Patient Exp.* 2023;10:23743735231179059. doi:10.1177/23743735231179059
12. Wolf JA, Niederhauser V, Marshburn D, et al. Defining patient experience. *J Patient Exp J.* 2014;1(1):7-19. doi:10.7326/M18-0850
13. Wolf JA, Niederhauser V, Marshburn D, et al. Reexamining "defining patient experience". The human experience in health-care. *J Patient Exp J.* 2021;8(1):16-29. doi:10.35680/2372-0247.1594

14. Wolf J, Ipsen T. Maintaining human experience in a new era of virtual connection. The Beryl Institute. Accessed January 10, 2023. <https://www.theberylinstitute.org/store/viewproduct.aspx?id=16686063>
15. Khairat S, Pillai M, Edson B, et al. Evaluating the telehealth experience of patients with COVID-19 symptoms: recommendations on best practices. *J Patient Exp*. 2020;7(5):665-72. doi:10.1177/2374373520952975
16. Zhao M, Elshoni H, O'Brien J, et al. Patient and provider experiences with virtual care during the COVID-19 pandemic: A mixed methods study. *Patient Exp J*. 2022;9(2):62-70. doi:10.35680/2372-0247.1674
17. Koning C, Friesen B, Daigle J, et al. Virtual cardiac rehabilitation: a rapid shift in care delivery in response to the COVID-19 pandemic. *Patient Exp J*. 2022;9(1):205-11. doi:10.35680/2372-0247.1592
18. Byravan S, Sunmboye K. The impact of the coronavirus (COVID-19) pandemic on outpatient services—an analysis of patient feedback of virtual outpatient clinics in a tertiary teaching center with a focus on musculoskeletal and rheumatology services. *J Patient Exp*. 2021;8:1-7. doi:10.1177/23743735211008284
19. Khairat S, Lin X, Liu S, et al. Evaluation of patient experience during virtual and in-person urgent care visits: Time and cost analysis. *J Patient Exp*. 2021;8:1-9. doi:10.1177/2374373520981487
20. Millstein JH, Chaiyachati KH. Creating virtual presence during a pandemic. *J Patient Exp*. 2020;7(3):285-6. doi:10.1177/2374373520930447
21. Gotlib Conn L, Tahmasebi H, Meti N, et al. Cancer treatment during COVID-19: A qualitative analysis of patient-perceived risks and experiences with virtual care. *J Patient Exp*. 2021; 8:1-8. doi:10.1177/23743735211039328
22. Stamenova V, Agarwal P, Kelley L, et al. Uptake and patient and provider communication modality preferences of virtual visits in primary care: a retrospective cohort study in Canada. *BMJ Open*. 2020;10(7):e037064. doi:10.1136/bmjopen-2020-037064
23. Catalo C, Chung-Lee L. How has COVID-19 changed the way we do virtual care? A scoping review protocol. *Healthcare*. 2022;10(10):1847. doi:10.3390/healthcare10101847
24. Peters MD, Godfrey CM, Khalil H, et al. Guidance for conducting systematic scoping reviews. *Int J Evid Based Healthc*. 2015;13(3):141-6. doi:10.1097/XEB.0000000000000050
25. Tricco AC, Lillie E, Zarin W, et al. PRISMA Extension for scoping reviews (PRISMA-ScR): Checklist and explanation. *Ann Intern Med*. 2018;169(7):467-73. doi:10.7326/M18-0850
26. Ferrua M, Mathivon D, Dufflot-Boukobza A., et al. Nurse navigators' telemonitoring for cancer patients with COVID-19: A French case study. *Support Care Cancer*. 2021;29(8):4485-92. doi:10.1007/s00520-020-05968-y
27. Reforma LG, Duffy C, Collier AR, et al. A multidisciplinary telemedicine model for management of coronavirus disease 2019 (COVID-19) in obstetrical patients. *Am J Obstet Gynecol MFM*. 2020;2(4):100180. doi:10.1016/j.ajogmf.2020.100180
28. Schultz K, Vickery H, Campbell K, et al. Implementation of a virtual ward as a response to the COVID-19 pandemic. *Aust Health Rev*. 2021;45(4):433-41. doi:10.1071/AH20240
29. Wurzer D, Spielhagen P, Siegmann A, et al. Remote monitoring of COVID-19 positive high-risk patients in domestic isolation: A feasibility study. *PLoS One*. 2021;16(9):e0257095. doi:10.1371/journal.pone.0257095E
30. Agarwal P, Mukerji G, Laur C, et al. Adoption, feasibility and safety of a family medicine-led remote monitoring program for patients with COVID-19: A descriptive study. *CMAJ Open*. 2021;9(2):E324-330. doi:10.9778/cmajo.20200174
31. Lam PW, Sehgal P, Andany N, et al. A virtual care program for outpatients diagnosed with COVID-19: A feasibility study. *CMAJ Open*. 2020;8(2):E407-13. doi:10.9778/cmajo.20200069
32. Bell LC, Norris-Grey C, Luintel A, et al. Implementation and evaluation of a COVID-19 rapid follow-up service for patients discharged from the emergency department. *ClinMed*. 2021;21(1):E57-62. doi:10.7861/clinmed.2020-0816
33. Clarke AC, Hull S, Semciw AI, et al. Descriptive analysis of a telephone based community monitoring service for COVID-19. *J Community Health*. 2021;46(6):1124-31. doi:10.1007/s10900-021-00996-z
34. Coffey JD, Christopherson LA, Glasgow AE, et al. Implementation of a multisite, interdisciplinary remote patient monitoring program for ambulatory management of patients with COVID-19. *NPJ Digit. Med*. 2021;4(1):123-123. doi:10.1038/s41746-021-00490-9
35. Ferry OR, Moloney EC, Spratt OT, et al. A virtual ward model of care for patients with COVID-19: retrospective single-center clinical study. *J Med Internet Res*. 2021;23(2):e25518. doi:10.2196/25518
36. Hutchings OR, Dearing C, Jagers D, et al. Virtual health care for community management of patients with COVID-19 in Australia: Observational cohort study. *J Med Internet Res*. 2021;23(3):e21064. doi:10.2196/21064
37. Malwade S, Marri M, Gundamraj R, et al. Telemedicine in your pocket: an alternative teleconsultation tool in a pandemic and in resource-poor settings. *Telemed J E Health*. 2021;28(8):1215-9. doi:10.1089/tmj.2021.0443
38. Micallef M, Hurley S, Brell N, et al. Telehealth outpatient coronavirus disease 2019 case management at a tertiary hospital in Sydney. *J Telemed Telecare*. Published online June. 2021;21. doi:10.1177/1357633X211024097
39. Michaud A, Vadeboncoeur A, Cloutier L, et al. The feasibility of home self-assessment of vital signs and symptoms: A new key to telehealth for individuals? *Int. J. Med. Inform*. 2021; 155:104602. doi:10.1016/j.ijmedinf.2021.104602
40. Pimlott N, Agarwal P, McCarthy LM, et al. Clinical learnings from a virtual primary care program monitoring mild to moderate COVID-19 patients at home. *Fam Pract*. 2021;38(5):549-55. doi:10.1093/fampra/cmab130
41. Raffan F, Anderson T, Sinclair T, et al. The virtual care experience of patients diagnosed with COVID-19. *J Patient Exp*. 2021;8:2374-3743. doi:10.1177/23743735211008310
42. Swift J, Harris Z, Woodward A, et al. An evaluation of a virtual COVID-19 ward to accelerate the supported discharge of patients from an acute hospital setting. *Br. J. Health Care Manag*. 2022;28(1):7-15. doi:10.12968/bjhc.2021.0073

43. Wong G, Douglas K, Fuest S, et al. COVID-19 home monitoring: an institutional approach to bridging care during a pandemic. *Telemed J E Health*. 2022;28(7):1044-9. doi:10.1089/tmj.2021.0317
44. Xu H, Huang S, Qiu C, et al. Monitoring and management of home-quarantined patients with COVID-19 using a WeChat-based telemedicine system: retrospective cohort study. *J. Med. Internet Res*. 2020;22(7):e19514. doi:10.2196/19514
45. Institute of Medicine (US) Committee on Quality of Health Care in America. *Crossing the quality chasm: A new health system for the 21st century*. National Academies Press (US); 2001.
46. Ahmed F, Burt J, Roland M. Measuring patient experience: concepts and methods. *Patient*. 2014;7(3):235-41. doi:10.1007/s40271-014-0060-5
47. Jackson J, MacKean G, Cooke T, et al. Patient and provider experiences with relationship, information, and management continuity. *Patient Exp J*. 2017;4(3):38-47. doi:10.35680/2372-0247.1192
48. Canadian Medical Association. Virtual care in Canada: discussion paper. Accessed January 10, 2023. https://www.cma.ca/sites/default/files/pdf/News/Virtual_Care_discussionpaper_v2EN.pdf
49. Gilbert RM. Reimagining digital healthcare with a patient-centric approach: the role of user experience (UX) research. *Front Digit Health*. 2022;9(4):899976. doi:10.3389/fgth.2022.899976
50. Government of Canada. Guidance for a strategic approach to lifting restrictive public health measures. Accessed April 20, 2022. <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/guidance-documents/lifting-public-health-measures.html>
51. Government UK. COVID-19 response: Living with COVID-19 guidance. Accessed April 20, 2022. <https://www.gov.uk/government/publications/covid-19-response-living-with-covid-19/covid-19-response-living-with-covid-19>
52. Chung-Lee L, Catallo C, Fredericks S. Access to virtual care: the problem with giving to some and not all. *Can J Nurs Leadersh*. 2021;34(4):97-102. doi:10.12927/cjnl.2021.26684