


BMJ Open Did the pandemic influence telehealth use among Swiss emergency department patients? A sequential explanatory study

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To cite: Michel J, Schmid S, Aebbersold ER, *et al.* Did the pandemic influence telehealth use among Swiss emergency department patients? A sequential explanatory study. *BMJ Open* 2023;**13**:e070046. doi:10.1136/bmjopen-2022-070046

► Prepublication history and additional supplemental material for this paper are available online. To view these files, please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2022-070046>).

Received 11 November 2022
Accepted 30 January 2023

ABSTRACT

Objective The aim of this study was to explore pandemic telehealth use among walk-in emergency department (ED) patients at Bern University Hospital.

Design As in sequential explanatory designs, quantitative data were collected first. To explain the quantitative results, telehealth use was explored qualitatively using an interview guide informed by the quantitative results.

Setting The University Hospital of Bern ED designed a follow-up cross-sectional study (baseline done in 2019) to assess telehealth use among ED walk-in patients during the pandemic (2021).

Participants We included participants of all age groups that had consented to a follow-up qualitative study and also ensured a gender and age balance. We aimed for data saturation that was achieved by the seventh key informant. A total of 11 key informants took part in the study.

Results Three main themes emerged, namely: (1) telehealth use means the use of a telephone for many; (2) telehealth has both remits and limits; and (3) perceived future telehealth opportunities and threats.

Conclusion The pandemic seems not to have increased telehealth use among walk-in ED patients. The slight increase observed in telehealth use among women seems related to the use of the COVID-19 app from trusted sites like the Federal Office of Public Health. Telehealth emerged as having remits, limits, opportunities and threats. The human factor preference emerged as very important to all key informants. The fear that telehealth threatens the human factor cannot be over emphasised. The telephone remains the biggest telehealth modality among Swiss ED walk-in patients.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ The mixed method approach, a sequential explanatory design, facilitated a holistic view of telehealth use among Swiss emergency department (ED) patients.
- ⇒ The first cross-sectional study (2019) did not carry out a follow-up qualitative study; hence, comparison is limited to quantitative findings only.
- ⇒ Telehealth use among Swiss ED walk in patients might have changed now (2022) as the pandemic shows signs of ebbing.
- ⇒ Perspectives of the other ED patients excluded from the study group, like those with severe illness and those who do not speak German, remain unknown.

it did not really catch on.⁵ In the USA, telehealth use increased 38 times in 2021 from pre-COVID-19 baseline.⁶ Various COVID-19 specific applications were developed, and hotlines were set up to provide information to concerned citizens.⁷ A remote patient monitoring solution for COVID-19 positive patients provided educational materials and the ability to contact health professionals when needed, giving patients a sense of security.⁸ Remote consultations also became possible in many places. These applications relieved the burden on the healthcare system and proved to be an effective and practical solution for preventing, treating and containing the spread of COVID-19.⁹ Both patients and healthcare professionals expressed great satisfaction with the use of telehealth and a willingness to continue using telehealth after the pandemic.¹⁰ Despite the telehealth successes, disparities in telehealth access for ethnic and racial minorities as well as the elderly, threaten to stand in the way.⁴ It is also important to highlight that above and beyond patient acceptance of telemedicine, some ethical and legal aspects such as protection of data, physician malpractice, liability and telemedicine regulations are yet to be established.¹¹

INTRODUCTION

In an attempt to stem the tide of COVID-19 infections, many health systems set up telehealth options of different sorts during the COVID-19 pandemic. Telemedicine as a term was coined by Thomas Bird in the 1970s.¹ Telehealth is defined as healthcare provided at a distance.²⁻⁴ This is made possible by the dissemination of communication technologies such as the telephone and the internet. Even before the COVID-19 pandemic, there were attempts to establish telehealth as a resource in healthcare, but



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In 2017, more than 65% of the Swiss population stated that they had searched for health information on the internet in the last 3 months.¹² At the time, 13% of the population was insured in a telemedicine insurance model.¹² In that same year, the four largest Swiss telemedicine providers together recorded around 2.5 million patient contacts per year,^{13 14} mainly telephone calls. A 2018 survey of Swiss physicians, however, revealed high levels of digitisation scepticism.¹⁵ Costs, lack of reimbursement, legal liability, privacy and confidentiality, technically overwhelmed staff and resistance to change were among the cited factors.¹⁶ It is evident that both healthcare providers and patients are still seeking to understand preferences for telehealth versus inpatient consultation.^{17 18} The reasons for not using telehealth among patients were age, educational level, limited computer skills and lack of digital literacy.¹⁶ During the COVID-19 pandemic, the Swiss health system also adopted various digital applications. These tools proved effective as information sources in alleviating fear and anxiety to a certain extent and in reducing the health system burden.¹⁹⁻²¹ University ED Bern carried out the first cross-sectional study of walk-in patients in 2019 (baseline). This study revealed that 44% of walk-in patients had used telehealth prior to their visit to the emergency department (ED) of the university hospital of Bern. People of all ages had used telehealth, usually a call to their family physician, while some patients, predominantly under the age 65 years, had also used internet sources. Telehealth use was associated with people with higher education in this study.²² For telehealth to continue as a useful resource for the healthcare system after the COVID-19 pandemic, patients need to accept and use the applications.²³ The COVID-19 pandemic catapulted telehealth use worldwide.^{3 8 10} Has telehealth use changed among Swiss walk-in ED patients? This evidence gap prompted our study.

The aim of this study was to explore pandemic telehealth use among walk-in ED patients at Bern University Hospital as an explanatory qualitative study embedded in a follow-up cross sectional study (pandemic telehealth use).

METHODS

Study design and participants

We employed a sequential explanatory study embedded in a repeat cross-sectional study to explore the frequency and influence of the pandemic on telehealth use among University Hospital Bern, ED walk-in patients.

Context

The University Hospital of Bern ED designed a follow-up cross-sectional study (baseline 2019) to explore telehealth use among ED walk-in patients during the pandemic (2021) (see [figure 1](#)).

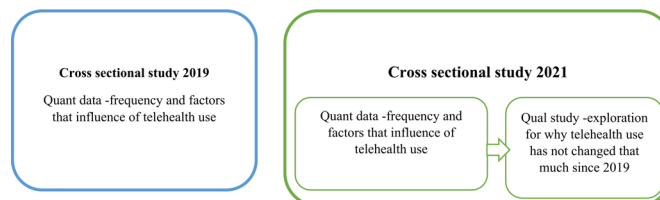


Figure 1 Sequential explanatory study embedded in a repeat cross-sectional study.

Quantitative study

Out of a total of 1020 participants eligible for the survey, 443 completed the questionnaire. The results demonstrated a tendency towards an increase (6.4%) in telehealth use post-COVID-19 (50.3%, n=223) COVID-19 vs 43.9%, n=183) during baseline. The differences were not statistically different (p=0.058). The results however demonstrated a shift to more female patients using telehealth in the COVID-19 versus pre-COVID-19 surveys (female 54.9% (n=124) vs 45.1% (n=102), p=0.052). The findings however were also not statistically significant either. In the COVID-19 survey, first use of telehealth was reported by 12.2% (n=54) of patients, with a significant increase among patients with low educational status, and the latter patients often indicated that they did not plan to use telehealth after the pandemic. The perceived usefulness of telehealth and adherence to recommendations increased in the COVID-19 survey compared with the pre-COVID-19 baseline survey (adherence 90.3% (n=149) vs 78.0% (n=131), p=0.002). These quantitative findings are being published elsewhere (accepted).²⁴

Qualitative data

As in sequential explanatory designs, quantitative data were collected first. To explain the quantitative results presented previously, telehealth use was explored qualitatively using an interview guide informed by the quantitative results (see online supplemental annex 1).

Central question

Has the pandemic influenced your telehealth use?

Subquestions

- ▶ What does telehealth mean to you?
- ▶ Describe your telehealth experience (positive and negative)?
- ▶ What should be done to make telemedicine appealing to you (others)?

Purposeful sampling and sample size

We purposefully sampled participants (maximum variation) that had taken part in the survey and had further consented to a follow-up study. We included participants of all age groups and also ensured a gender balance. We aimed for data saturation,^{25 26} which was achieved by the seventh key informant. A total of 11 key informants took part in the study (see [table 1](#)).

Table 1 Key informants

	Age 18–24 years	Age 25–44 years	Age 45–64 years	Age >64 years	Total
Female	1	2	1	1	5
Male	–	3	1	2	6
Total	1	5	2	3	11

Data collection

Video interviews were held with most of the participants, and a few participants opted to come to Inselspital University Hospital for a hybrid interview, with one researcher streaming in and two researchers on site, conducting the face-to-face interview. A semistructured interview guide was used, and this was adapted iteratively. Three qualitative researchers sat in each session and fielded the questions in alternating turns. All interviews were conducted in German by researchers fluent in both languages. The interviews lasted for 30–45 min. All participants gave both oral and written consent before audio recordings (see [table 1](#) for a summary of key informants).

Data analysis

Audio records were transcribed verbatim. The data were coded into categories that were then grouped to generate themes.

Measures to ensure trustworthiness of data

The interview guide was adapted iteratively during data collection and data analysis began with the first interview to ensure dependability. The qualitative researchers kept reflexive journals and debriefed at the end of each interview throughout data collection. A thick description of participants, data collection and context have been outlined to ensure transferability.^{25 26} Data management and coding was done with the aid of MAXQDA2022.

Patients and public involvement study

Patients and the public were not involved in the design, conduct, reporting or dissemination of this research. The follow-up nature of the study (repeat cross-sectional study) made it imperative to stick as closely as possible to the methods used in the earlier study for comparability. The patients and the public were not involved in the earlier 2019 study.

Source of funding

No external funding was received for this study.

FINDINGS

We set out to explore pandemic telehealth use among ED patients expecting an increased telehealth adoption (quantitative findings under review elsewhere).²⁴ Qualitatively, three main themes emerged, namely: (1) telehealth use means the use of a telephone for many; (2) telehealth has both remits and limits; and (3) perceived

future telehealth opportunities and threats (see [table 2](#) for a summary of themes).

Theme 1: telehealth use means the use of a telephone for many

Many participants initially cited not using telehealth. When probed, it turned out that all participants use the telephone regularly. This makes sense considering that almost everyone now has access to a smartphone. It is important to note that though widely used, many participants do not consider this as telehealth. Participants cited making calls to the GP, calls to the health insurance and calls to a close relative, a sister or a mum for advice on what to do when they have a health issue. Further is what was said:

I simply sorted more things with my doctor over the telephone during the pandemic. (Key informant 2)

Yes, often in relation to my children. When they were little, we had contact with the emergency services several times, for example or phoned Medgate, a provider for the health insurance company. It was mainly to get information on the first measures to take at home. (Key informant 8)

Many participants expressed that the use of the telephone, however, was put to the test during the pandemic. They reported jammed telephone lines and call centres that were manned by non-medical personnel as very frustrating. When probed about the use of the internet, a few participants alluded to the fact that they searched for COVID-19 symptoms. Further is what was said:

Yes, I google symptoms or medical conditions affecting me or people close to me. (Key informant 7)

When probed if they trusted the internet search results, most participants expressed taking these search results with a pinch of salt and always asking the GP for a second opinion. Interestingly, a few participants cited Google as a tool that empowers them before a talk with their GP. Probed if they told the GP that they had used internet search, many participants revealed not telling the GPs of their internet use on purpose as revealed further:

Yes, well then, I don't go to the doctor and say, I looked it up. I simply say I have pain here, what could this be? And of course, if I receive any medicine, I quickly look up the internet for side effects and indications, because the package inserts are impossible to read. It's hard to read the small print, isn't it? And I also consult our circle of friends, okay, where we tell each other our ailments, related to age. That is usually the topic of conversations we hold. We say, oh now I've got that and got this medicine and the other one shares their story. We exchange and get to hear what might be good or bad. The relationships, people, that is still probably my primary go to source. (Key informant 10)

Table 2 Summary of emergent themes

Theme	Category	Unit meaning
Telehealth use means the use of a telephone for many. (What is telehealth)	A call	<ul style="list-style-type: none"> ▶ Appointment setting. ▶ A call to my doctor. ▶ A call to the insurance. ▶ A call to my mum sister, friends and grandparents. ▶ No gender differences in telehealth use. ▶ Internet search but do not tell doctor.
	Internet search for symptoms	<ul style="list-style-type: none"> ▶ Internet search as both an empowerment tool and scaremonger.
	Barriers	<ul style="list-style-type: none"> ▶ Socioeconomic status education, language and communication skills (why foreigners flood ED). ▶ Apps complicated to use, limited to COVID-19 apps and certificate. ▶ Hotlines staffed with unqualified staff. ▶ Calls not answered, jammed lines. ▶ Fear of viruses and data security breaches.
Telehealth has both remits and limits	Telehealth remit	<ul style="list-style-type: none"> ▶ Triage and monitoring. ▶ Nudging people to seek care and anonymity. ▶ Conditions associated with stigma and shame. ▶ Rural populations.
	Telehealth limits	<ul style="list-style-type: none"> ▶ Parents still go to paediatrician or ED after telehealth use. ▶ GP model is better for the elderly. ▶ Not suitable for severe pain, children, older people and mental health patients. ▶ Apps can be manipulated. ▶ Second-class medicine for some groups. ▶ Accountability issues. ▶ Potential for errors.
Future telehealth opportunities and threats	Opportunities	<ul style="list-style-type: none"> ▶ Equitable access to healthcare. ▶ Telehealth for monitoring. ▶ Sports apps. ▶ Potential to improve access to care and triage mental health.
	Threats	<ul style="list-style-type: none"> ▶ Human factor element (power of voice). ▶ GPs have no time, time spent on documentation, concern for healthcare worker mental health issue. ▶ Pharmacies as proxies to telehealth. ▶ Opportunity to ask questions. ▶ Second-class medicine for the not haves.

ED, Emergency Department.

Most of the participants revealed that the reason they refrain from using internet search is because they often get terrible and fatal diagnoses. Those that use the internet also reported seeking a second opinion from their GP and not simply relying on the web. When asked about the use of any apps, many participants reported only having used the COVID-19 app and certificates. They cited trust in the health authorities as the reason they downloaded these apps. Probed on why they do not use other telehealth tools, participants reported fear of viruses, technical challenges particularly the elderly and the general process of having to download and install apps as complex and cumbersome.

The role of education, language and communication in telehealth was cited by many. Some participants attributed the language and communication barriers as

the reason many foreign nationals walk into Inselspital ED even when they are not severely sick. Higher education was associated with the ability to differentiate and navigate the internet and the ability to tell which sites are trustworthy and which ones are not.

I call it remote diagnosis or telemedicine. That is a bit more demanding than if I go to the doctor's practice, then he can inspect my bad leg, examine it without me saying much but on the phone, I need to be able to describe it. I also have to understand what the doctor tells me, which is perhaps more of a challenge for the other person. I have to be able to process all that. I can also imagine, suppose someone calls a telemedicine service like this after a road traffic accident. If you're somehow concerned or upset then

it's certainly more difficult, to take recommendations over the phone. Education, language and communication skills certainly play a role. Telemedicine might be more appealing for those with these skills, the highly educated. (Key informant 4)

Theme 2: telehealth has both remits and limits

Participants cited that telehealth has both remits and limits.

Remits

With almost everyone in possession of a cellphone, participants pointed out that telehealth has the potential to increase access to healthcare through the nudge it gives people to seek care. Participants indicated that telehealth is useful in triage for rural populations away from medical facilities and as an information source for decision making, whether to seek care immediately or to wait.

They also cited the usefulness of telehealth in follow-up and monitoring of patients, particularly those with chronic illnesses. Some participants cited telehealth as having a nudging effect on people to seek care particularly for conditions associated with stigma and shame, such as mental health and sexually transmitted infections. The anonymity offered by telehealth emerged to be the pull factor.

Or just telling something really personal, private or intimate is shameful for certain people and it's definitely easier on the phone. (Key informant 5)

The issue of shame emerged as a barrier to access healthcare, particularly among the elderly men. Further is what the participants said:

There are many men, there may be women too, but there are men here who are really ashamed of their illness in Switzerland. Among intellectuals or among rich people in many cases, men don't want to talk about illnesses. They want to uphold the picture of being always healthy and always efficient. Being ill to many means, I am not good anymore. This is a challenge for many men including the upper social class and is a barrier to accessing care or going to the doctor. (Key informant 3)

Power of voice

A factor associated with face-to-face healthcare services but also to a certain extent with telehealth, in particular telephone or video consultations, was the power of voice. One key informant revealed the following:

I'm used to media. I did radio. I was a radio announcer. So, I am used to things like that. Voice means a lot to me. A voice can calm me down. (Key informant 3)

It is difficult to conclude on that, because when it comes to booking a massage at a physiotherapist or a physiotherapist appointment, then the voice on the other end of the line is perhaps not that important.

When it comes to reassurance because I have symptoms or something troubling me, I need contact with a human being, a voice I can ask questions. A phone call, yes but face to face contact is definitely preferable to a hotline. (Key informant 11)

Limits

Most participants cited telehealth as not suitable for diagnosis, mental health, children or when one is in severe pain. Participants stressed that when it comes to mental health issues, severe pain, infants and children, conditions can deteriorate quickly and in groups of people who often cannot articulate fully, how they are feeling, telehealth use ought to be limited to triage. Parents revealed that they still go to the paediatrician or ED after telehealth use to be sure. The challenge of technology and lack of continuity of care was cited by many as the reason telehealth is not suitable for the elderly who often have comorbidities, perception and or cognitive challenges. Some participants said the following:

Most of the elderly also suffer from dementia, telehealth is not ideal. (Key informant 2)

Telemedicine has its limits in older people who not only have problems with perception but might also not be very familiar with the media and technology. I don't know how much telemedicine can achieve here. Its utility here is very limited. (Key informant 3)

Apps are amenable to manipulation and fear of second-class medicine for some

Participants also cited that apps can be manipulated, and others expressed the fear of the emergence of a second-class medicine for some groups, the low socioeconomic group that are forced to take a telehealth model due to low premiums. Accountability questions were also raised by key informants. Who is responsible when a patient deteriorates after a recommendation to stay at home and not seek care? Others also pointed at the potential for errors, particularly if patients are not so eloquent and might not report the symptoms accurately to the doctor over the phone.

They apps are apt to manipulation. The COVID-19 app, it was just a few questions. Even though the recommendation was not to test and that I most probably did not have COVID-19, I still wanted to do a PCR test. So, I did the survey again and then ticked something else and then got the recommendation to test and then got an appointment. (Key informant 11)

And then in the Inselspital, there was always a different person. Of course, you have to tell everything from the beginning again. It's annoying you know. (Key informant 5)

Many participants associated the insurance requirement of calling the health insurance first with telemedicine. Many reported having switched back to the GP model, stressing that the telehealth model by insurance

companies is not ideal for the elderly with multimorbidities as revealed further:

I just had to say I have a problem with that health insurance model (telehealth). I have always been referred to a specialist by the family doctor. Telemedicine (call to the insurance provider) does not refer people to a specialist. In an emergency, I know it's not a problem. Emergencies don't have to go through telemedicine. But when you are young and think that you have a specific problem that needs to be attended to by a specialist, in my mind, I don't think it is necessary to be referred by telemedicine first to the family doctor and not the doctor responsible for this problem. That irritated me until I also found out that the model isn't ideal nor the cheapest either. I switched to the family doctor model. I am telling you my concerns, it's not good for older people that's why I'm here - that's the reason I came here to tell you this about telehealth.' (Key informant 3)

If telemedicine is used as a triage tool for everyone, that would be good. But if it's just for one socio-economic group, say the poorer people, then that becomes problem. That would mean that the people who are rich have access to the family doctor, but those with less money, first have to make a phone call and then someone decides whether they can go to the doctor or not? That cannot be good for any society. (Key informant 5)

My wish would be that telemedicine stays exactly as it is now. I'm absolutely satisfied the way it is now, to be honest. To improve, yes, I don't know if the new technology will make it possible for a physical exam to be done at a distance. I think that can definitely be improved. But to be precise, a diagnosis from a tool vs a diagnosis from a doctor that has examined you physically, cannot be compared. Not because telemedicine is bad, but because of the physical limitations and the human presence, right. I'm actually very happy the way it is. (Key informant 5)

Theme 3: future telehealth opportunities and threats

Telehealth was reported as having both opportunities and threats.

Opportunities

Equitable access to health

Key informants cited the potential of equitable access to healthcare since almost everyone has a smartphone. They cited remote villages and difficult to reach places as examples. Opportunities in telehealth were reported as tools for monitoring health and follow-up as well as sports apps to track activity and promote fitness.

Shame and stigma

Some key informants cited that telehealth has the potential to improve access to mental healthcare and other conditions associated with shame, like sexually transmitted

diseases where patients want anonymity. Participants saw potential in conditions often associated with shame and stigma. The issue of shame was cited by many male participants as revealed previously.

Threats

A cause for concern raised by participants was the fact that GPs have less and less time. This issue was also associated with the fear of having second class medicine for some population segments, with the rich able to access GPs and those with less forced to use telehealth.

Human factor

Many participants saw the human factor in the health system being threatened by telehealth and a push towards telehealth, as GPs now have no time or little time for patients. Some participants cited the electronic patient records as eating away the consultation time, as GPs spend a lot of time on documentation and engaging with the computer and technology rather. Others expressed concern for their GP's mental health and well-being, and others even accused their GPs of having broken that doctor patient trust. Further is what was revealed:

I think so, yes. Yes, the doctor didn't have much time either. That annoyed me a bit. So, he was really very short and never used to be like that. That surprised me, yes. Last time I was with him - that was just before the pandemic measures were lifted - I didn't recognize the person, to be honest. He was very stressed and not at all as friendly as usual. So that shocked me a bit. Is it because of the corona pandemic, did it take humanity away? That bothered me, to be honest. He just didn't look good. He gave me a stressed impression. He hardly had time for me. I got worried that now Corona is affecting the mental health of our health care workers. Yes, these questions came up after my doctor's visit. Simply because he used to be completely different and much nicer and he showed concern and had time for you as a patient. In terms of telemedicine, can it address these issues? No, I don't think so, it is about the person, my doctor. Is he okay? Is he in a condition to treat me well, on the phone, I can't see him, I can only recognize the voice. That does not resolve the issue. I've heard other people say the same about their doctors. I am not the only one saying this in my circle. (Key informant 5)

So, I'm not mad at the doctor at all. I also see what has happened the last two years. I absolutely understand. It's just my concern that normal health care can no longer be guaranteed. I really never got mad at the doctor because I can imagine what he went through. It would be inappropriate in my opinion to blame the doctor. It's primarily us patients who needed him so much. I am afraid that the health care system is not going to withstand this. Who is caring for our health care workers? (Key informant 5)

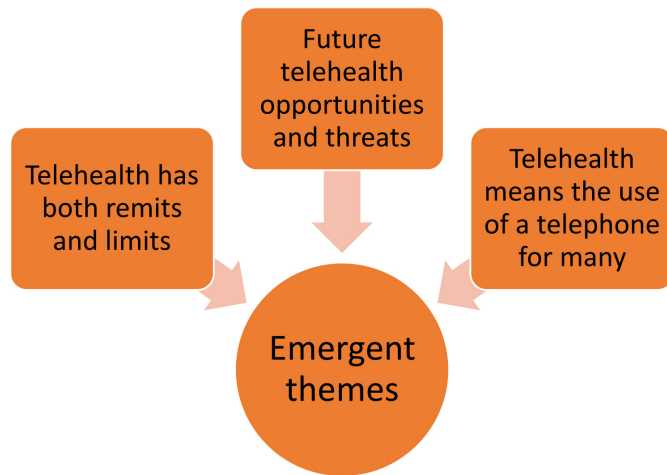


Figure 2 Themes.

The importance of the human factor was underscored by many participants, suggesting pharmacies as proxies to telehealth, in an attempt to preserve the human contact and also lift the load off the family doctor system, that seems to be breaking under the pandemic pressure (see [table 2](#) and [figure 2](#) for summary of themes).

DISCUSSION

This study qualitatively explored telehealth use during the pandemic period. Three main themes emerged, namely: (1) telehealth use means the use of a telephone for many; (2) telehealth has both remits and limits; and (3) perceived future telehealth opportunities and threats (see [table 2](#) and [figure 1](#)).

Telehealth use means the use of a telephone for many

For many, telehealth use still means the use of a telephone, like a call to the healthcare provider or insurance provider for advice or to set up an appointment.^{22 27} Social circles emerged as an important first port of call when people are confronted with a health issue. This seems to be linked to the human factor component that many patients alluded to as critical in medical decision making. The role of the social circle and friends was underscored by many key informants. In support of our findings, reliance on social networks is a common phenomenon, particularly in sub-Saharan countries.²⁸ The assumptions are that these communities and individuals grapple with limited access to healthcare, hence the reliance on social networks, to enhance their chances of accessing healthcare. It is imperative to highlight that our study was carried out in a western context, where access to healthcare is easy and guaranteed. The nuances of how different population groups activate and access social networks when faced by ill health seem context dependent and warrant further research.²⁸

The use of apps by ED patients remains limited. Research from elsewhere revealed that while patients use their smartphones for many things, very few do so for their health. The dissemination of apps in clinical

practice remains a challenge.²⁹ Digital health has been reported as difficult to navigate and app use perceived as complicated.³⁰ Two separate studies revealed that an app, supporting women with breast cancer undergoing surgery, was found to increase postoperative anxiety and depression, while another app, designed to reduce distress and alcohol consumption, was found to actually increase distress and alcohol consumption.³¹ The governance of apps and validation are still areas of contention.^{31 32} Noteworthy, key informants alluded to using the Swiss COVID-19 app and certificate because of their trust in the source – Federal Office of Public Health (FOPH). The fear of viruses and data security issues also emerged as one reason participants do not use telehealth. Data privacy concerns^{33 34} have also been reported elsewhere in support of our findings.

Internet search as both an empowerment tool and a scaremonger

The internet search was reported by some key informants as empowering. Access to information has been associated with patients feeling empowered, concurring with our findings.³⁵ An interesting find was that patients reported not telling the doctors that they had done an internet search on the issue. Medical information on the internet can support both doctor and patient.³⁶ Medical professionals need to be aware of this and should find ways to facilitate communication with patients, without creating animosity and mistrust.³⁶ Some attribute this challenge to a lack of education, where doctors learnt and developed bedside manners but are yet to learn and develop web side manners.³⁷

Avoidance of internet search

Many participants revealed that they do not use an internet search for fear of receiving a fatal, life-threatening diagnosis. An Australian study found 60% of its respondents convinced they had a fatal illness after googling symptoms, only to find out later that it was something else.³⁸ Data from the web remain an unresolved issue since online health data can negatively impact health-related choices of patients.³⁹ Education, socioeconomic status, language and communication skills emerged as affecting telehealth use.³⁹ The ability to navigate the internet, decipher trustworthy from untrustworthy sources, ability to understand medical terminology and jargon were revealed as affecting telehealth use. Education has been found strongly associated with telehealth use.^{39 40} This begs the question, ‘What needs to be done not to leave the low socio-economic group behind, when it comes to telehealth?’. The issue of education, language and communication skills might also explain a concern raised by some key informants in this study that foreign nationals present to ED even the so-called cold cases, rather than using telehealth. Telehealth relies on the patient’s ability to communicate how they are feeling, a mammoth task if one has not mastered the local language – German.



Telehealth remits and limits

Key informants cited that telehealth has the potential to nudge people to seek care, particularly in conditions associated with stigma and shame, concurring with findings elsewhere.⁴¹ The other form of shame, was that associated with the elderly males, who feel their identity as a contributing worker, affected by illness. However, this remains unaddressed by telehealth.⁴² Illness seems unacceptable to some members of the society, particularly males, and seems to be associated with the feeling of being useless, accompanied by shame, self-stigma and feelings of being left on the side lines of life.⁴² Neither telehealth nor the conventional general practitioner (GP) model seem able to address this issue. More research is needed in this area. The convenience of telehealth, for example, a call to the doctor, has been associated with reduced time taken off work. Studies elsewhere revealed telehealth as having the potential to increase timely and convenient access to healthcare services for many patients.^{10 23 27 37}

The limits of telehealth emerged as not being suitable for severe pain, children, mental health patients and older people who often suffer from dementia and perception issues. In line with our study, telehealth limits, among others, perceived provider paying less attention, challenge of engagement and posing questions and difficulty in establishing a provider patient relationship have been reported elsewhere.³⁷ Telehealth is not suitable in instances when a physical examination is needed and works best for routine and familiar health issues like chronic conditions.²⁷ Both healthcare providers and patients are still seeking to understand preferences for telehealth versus inpatient consultation.^{17 18}

Noteworthy was the issue of apps amenable to manipulation when one is interested in a particular recommendation. This issue is also associated with both accountability and potential for errors also cited elsewhere.^{30–32}

Future telehealth opportunities and threats

Most of the key informants cited telehealth as a tool with the potential to ensure equitable access to healthcare, particularly for rural populations. They also cited telehealth as having the potential to nudge people to seek care early or take treatment. Key informants particularly saw the nudging role potential of telehealth in addressing the burgeoning mental health challenge.^{43–45} Nudging has been identified as a benefit of telehealth in support of our findings.⁴¹ Key informants also cited the potential of telehealth as a tool for monitoring health. The utility of telehealth as a source of information in reducing the health system burden and follow-up support have been reported elsewhere.^{20 23 37} Key informants also cited the potential of telehealth in monitoring physical activity and keeping patients healthy. The role of sport apps is still disputed, with research suggesting that the downloading of an app does not necessarily translate into improved fitness or habits.⁴⁶

Human factor

All the participants cited the importance of the human factor in healthcare system, and they see telehealth as a threat to this.⁴⁷ The power of voice emerged as very important.⁴⁷ Associated with this concern is the issue that GPs have less and less time for patients as they spend more time on technology and/or documentation. The key informants raised concerns over the mental well-being of healthcare workers, with some reporting having seen their own GPs affected.^{44 48} The importance of human contact was underscored with many participants citing the importance of opportunities to ask questions. Some suggested pharmacies to be used as proxies to telehealth in future.^{49–51}

Second-class medicine for the poor

Another major concern was the emergence of second-class medicine for those from low socioeconomic status, kind of forced to use telehealth, while the rich have access to GPs. This is because the telehealth model usually has the lowest health insurance premiums in Switzerland and is often chosen by people with a lower income. The rising costs of healthcare and the rising cost of living and economic instability seem to fuel this fear.^{52 53} To substantiate the concerns of the key informants, Swiss health premiums are projected to rise sharply.⁵⁴

Recommendations

Apart from digital tools from trusted health authorities like the COVID-19 app, the telephone remains the biggest telehealth modality for Swiss ED walk-in patients. The importance of the human factor has also been highlighted. The power of the voice emerged as an interesting find.

We therefore recommend the following:

- ▶ Telephone services in the Swiss health system be improved and identified as an important telehealth tool that has the potential to reduce the health system burden.
- ▶ Attention ought to be paid to hotlines to prevent jamming and unanswered calls.
- ▶ If hotlines are to be effective as information sources, medically trained personnel are needed to man these lines.
- ▶ Without healthcare provider mental health, virtual or in-person consultation is affected. The mental health of healthcare providers warrants attention. Who is caring for these carers?

Strengths and limitations

Telehealth has become an indispensable component of our health system. Exploring and understanding telehealth use among Swiss ED patients assists in designing health services that do not only improve patient outcomes but also improve both telehealth uptake and patient satisfaction. Our study went beyond exploring and understanding telehealth use among ED patients to explaining why telehealth uptake did not change much.

The explanatory nature of the design could be of value to healthcare providers and authorities interested in improving both telehealth uptake and patient satisfaction. The study was carried out during 2021, and telehealth use among Insepsital ED walk-in patients might have changed now (2022) that the pandemic is showing signs of ebbing. The first cross-sectional study (2019) did not carry out a follow-up qualitative study; hence, comparison is limited to quantitative findings only. Perspectives of the other ED patients excluded from the study, like those with severe illness and non-German speakers remain unknown. Selection and self-report bias cannot be ruled out.

CONCLUSION

The slight increase in telehealth use among women, observed in quantitative data collection, seems related to the use of the COVID-19 app from trusted sites like FOPH. The sequential explanatory study revealed telehealth as having merits, limits, opportunities and threats. The human factor preference seems very important to all key informants and their concerns have been reported. The fear that telehealth threatens the human factor cannot be over emphasised. What conditions can be attended to virtually and which conditions cannot be is subject to further research. Fear, age, education, language, communication skills, complexity of apps and data issues emerged as barriers to telehealth uptake. Until these issues have been overcome, the telephone remains the biggest telehealth modality among Swiss ED walk-in patients.

Acknowledgements Emergency telemedicine at University of Bern, Switzerland, is supported by an endowed professorship by the Touring Club Switzerland.

Contributors Study design idea: JM, SS, AM and TCS. Data extraction and preparation: all authors. Qualitative interviews: all authors; qualitative analysis: JM and TCS. Writing first draft: all authors; revision of the final draft and approval: all authors; supervision: TCS; Guarantor: TCS.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests TCS holds the endowed professorship for emergency telemedicine at University of Bern, Switzerland.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Consent obtained directly from patient(s)

Ethics approval The study was registered with the Ethics Committee of Canton Bern, Switzerland, project number 2021-000030. Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data sharing not applicable as no datasets generated and/or analysed for this study. Due to the nature of the study, telehealth use participants did not agree for their data to be shared publicly. The data to support findings are available. Please contact corresponding author JM.

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