
Experiences and challenges in telemedicine of physicians from the National Capital Region during the COVID-19 pandemic: A qualitative study

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Abstract

Introduction The COVID-19 pandemic caused a shift to delivering health services through telemedicine. This study recognized the perceptions, experiences, and challenges of physicians who practice synchronous teleconsultation in the Philippines.

Methods: A qualitative descriptive research design using purposive sampling, eight physicians from NCR were interviewed. Data collected were subjected to thematic analysis for common themes and integrated into an analytic narrative.

Results: Eight physicians were included as participants. Different measures taken to remedy the gap included upskilling of physicians, adjustment of clerical work, ensuring data privacy, and creating a conducive workplace. Remote consultations posed limitations on physical examination and emphasized the reliance on diagnostics. Digital platforms used depended on the physician's preference, type of practice, and patient's accessibility. This led to an increased dependency on good internet and network service connections to ensure smooth teleconsultations. A lack of respect for the physician's personal boundaries and work-life balance was cited as a major challenge.

Conclusion: Telemedicine proved to be an option to provide healthcare despite its limitations, but the shift to its practice exposed many challenges as it is not a replacement for physical consultations.

Key words: COVID-19, telemedicine, synchronous teleconsultation

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Due to the COVID-19 pandemic, enhanced community quarantine (ECQ) was imposed over the whole of Luzon (Philippines), limiting operations, including physicians with their own private practice have altered the way healthcare is provided.^{1,2} Although it was not a novel idea, advancements in internet and mobile connectivity have furthered adopting the use of telemedicine in the Philippines as a mode of practice during the pandemic.³⁻¹² The World Health Organization (WHO) describes telemedicine, used

synonymously with telehealth, as: “The delivery of health care services, where distance is a critical factor, by all healthcare professionals using information and communication technologies (ICT) for the exchange of valid information for diagnosis, treatment, and prevention of disease and injuries, research and evaluation, and for the continuing education of healthcare providers, and their communities”.¹³ The use of telemedicine encompasses teleconsultation, teleconferencing, tele-proctoring, tele-education, telecare, telemonitoring, screening of diseases, and health care delivery.¹⁴⁻¹⁶ Specifically, teleconsultation focuses on the diagnosis and treatment in sites that are distant from the physician or primary care provider and can be further divided into asynchronous (monitoring or follow up through email and automated or text messages) and synchronous (real time, face-to-face interaction between the patients and healthcare provider via teleconferencing), with the latter being a better predictor of challenges and views related to telemedicine.^{14,17-20}

Despite struggling with challenges that encompass technological, social, and political domains, developing countries were not exempt from the mass migration in telemedicine and rapid adoption of systems brought about by COVID-19 restrictions.^{5,21-25} Data suggest that while developed countries continue to advocate for a greater telemedicine coverage, developing countries are still left at the infancy stage due to the shortage of trained healthcare professionals and the resistance of physicians to go against the traditional approach of face-to-face interaction.²² Other salient challenges faced by physicians involved changes in workplace factors, impaired work-life balance, and demographic factors, such as age.¹⁰⁻¹¹ The present study was conducted to address several research gaps regarding the barriers to telemedicine in developing countries, especially the Philippines wherein telemedicine is being adopted by more physicians. The study aimed to assess the physicians’ awareness, perception, and practices regarding telemedicine, and to describe the challenges and experiences of physicians who practiced telemedicine in the Philippines during the COVID-19 pandemic.

Methods

The study employed a qualitative descriptive research design guided by the epistemological position of social constructionism focused on the construction

of the reality of those who currently engage in the practice of telemedicine, specifically synchronous teleconsultations from physicians practicing in the National Capital Region (NCR) during the COVID-19 pandemic.

In-depth interviews were done as they brought out experiences and perspectives that are substantial and can be further expounded on. It also elicited flexibility and conversations about a range of topics.

Purposive sampling was done by utilizing connections of the researchers such as friends or affiliates of the researchers’ relatives or mentors. Possible participants were contacted via email or direct messaging and these connections themselves may also refer to others who fit the criteria. Since age and practicing experience were listed as variables that could have differences in response and could be an area of interest, this study focused on participants of a specific age group (ages 20–40 and ages 41 and up). This study also followed findings that revealed synchronous teleconsultations as an aspect that elicited vast barriers and challenges regarding the phenomenon being studied.^{19,20}

From August to September 2021, participants underwent in-depth interviewing by two researchers (one interviewer and one scribe) in Zoom, an online audiovisual setting, that lasted for 1 to 1.5 hours. The interviewer communicated with the participant while the scribe transcribed additional observations and stood by as a replacement in case the interviewer lost connection. Direct quotations from the participants were included to enrich the results of the analysis. A Zoom recording was also available to serve as a later reference during data analysis. The study followed a six-step data analysis procedure for thematic analysis by Braun and Clarke.²⁶ The analysis involved the following steps which were done by the researchers:

1. Familiarization with the data through reading and rereading the interview transcripts and listening to the audio recordings.
2. Coding the data by identifying features that are relevant to the research questions.
3. Searching for themes by clustering codes that share unifying features to create a coherent thematic map of the data.
4. Reviewing if the generated themes reveal something useful about the research question as well as checking if they fit the meanings that arose in the encoded data and the entire data set.

5. Defining and naming the themes, ensuring that the essence, scope, and boundaries of each are clearly emphasized.
6. Writing the report guided by the generated themes. This includes providing excerpts from the interviews to strengthen the analytic narrative.

The study was approved by the UERMMMCI Research Institute for Health Sciences Ethics Review Committee.

Results

There were 8 participants who were physicians aged 29-65 years included in the study. There were 7 superordinate themes and 22 subthemes derived and discussed below.

1. Understanding telemedicine as part of medical practice

- a. *Telemedicine: use of digital media for medical consultation.* Various digital media have been the centerpiece when talking about telemedicine with P6, a 29-year-old internist, working in a government hospital, defining telemedicine as essentially the act of consultation between a patient and a physician through an online or electronic medium, mobile, voice call over an internet platform, or social media for the purpose of whatever it is that the patient wants to consult for a medical reason.
- b. *Uncovering the existing role of telemedicine in the midst of a crisis.* However, the use of the term and concept was not dominant before. P1, a 60-year-old cardiologist with his own private practice, said that he would assume that every doctor has been doing telemedicine since time immemorial in the sense.

2. Efforts made to bridge the gap of telemedicine

- a. *Physician upskilling as a necessary step.* P3 learned about telemedicine by independently studying telemedicine articles she found from a university's website. P1, on the other hand, stated that he had attended webinars conducted by a university that have helped him understand the process of telemedicine and how to use it. In addition to learning

about how to perform the consultations online, P5, a 40-year-old internist, mentioned that she also had to prepare her hospital's interns by teaching them how to perform the neurological exam online.

- b. *Adjustments on clerical work for teleconsultation routine.* The physicians are supported by other people to perform their consultations. For P1, his secretary handles the scheduling and the billing of the consultation. This was also how P3 handles the scheduling and payments for her teleconsultations. In one hospital, there are delegated personnel that manage scheduling and triaging of patients as P6 stated.
- c. *Undertaking data privacy measures prior to teleconsultation.* The patients had to provide their informed consent to the physician before any teleconsultation started as P5 recalled. P3 stated that this was also the process she undertakes before starting her teleconsultation proper. In the hospital where P6 practices, patient data privacy is safeguarded by limiting access to the patient charts via a passcode-generated system.
- d. *Creating a conducive environment.* P1 describes his different setups at his clinic and his home. His set-up ensures that he can work efficiently while still presenting himself professionally. P3, who conducts telemedicine at her house, reported that she chose her bedroom as this was quieter. For P6, he shared that their hospital had provided a room where they had access to computers for telemedicine purposes.

3. The virtual patient: navigating medicine without physical contact

Mainly, the lack of physical contact emerged in the interviews, and it encompassed different aspects on how the physicians communicate and manage their patients.

- a. *Limited physical examination: altering the diagnostic process.* P7, a 32-year-old Obstetrics-Gynecology (OB-GYN) resident who does

- telemedicine in a government hospital. This lack in obtaining outright findings is further explained by P5 when she confirmed her statement on preferring in-person consultations. P6, the lack of physically examining his patients and only relying on the information given to him meant that he would have to rely on his patients' knowledge about their own health status. However, P8, a 31-year-old general practitioner working for a private company, asserted that despite having access to all the history and information, there would still be a distinction in understanding the patient's current state.
- b. *Shifting reliance on history & diagnostic tests.* It was evident for the majority of the physicians that they moved on to relying on history and diagnostic tests in order to manage the patients given the limitations (P5). P7 expressed a comparable perspective and mentioned that the challenge becomes more pronounced when patients fail to obtain laboratory results. In the context of his role as a cardiologist, P1 elaborated on the laboratory tests he would prioritize in the absence of a physical examination. Facing the absence of visual cues and relying on phone calls as a medium, P8 described her dependence on patients' complaints and descriptions of their symptoms.
 - c. *Limited nonverbal communication hinders observation and rapport building.* Most of the physicians expressed difficulty to the changes brought about by limited nonverbal cues including patient understanding, reactions, and facial expressions. The importance of being able to see their patients in video calls was also expressed by P8, whose consultations are held via phone call setting, when asked if there is something she would prefer to have during her teleconsultations. P4 also had the same sentiments and emphasized the difference in relation to her work as a psychiatrist. The lack of visual cues specifically impacted P6 whenever he takes teleconsultations on the phone as his practice is similar to P8.
 - d. *Ensuring patient understanding of illness management.* The difficulties that were conveyed by the physicians also came with efforts that they make in order to be sure that their medical advice is understood clearly by their patients. Such efforts made in relation to her patient demographic are explained by P7. For P1, he focuses on following what he learned from webinars. That is, writing down the information about the whole consultation so that he can give it to his patients after.
 - e. *Shorter duration of teleconsultations.* With the physical examination being limited, P1 reported that it led to the shortened duration. P6 noted that the physical examination takes up time and gave a specific consult duration. P2, a 57-year-old OB-GYN who has her own clinic and practices telemedicine privately, had a similar response to P1 on how face-to-face is much longer than telemedicine in relation to their numerous patient encounters.
- #### 4. Digital media platforms: telemedicine's tools
- a. *Based on the doctor's preference.* Some physicians chose their platforms based on its features and intuitiveness. For P4, she chose to use Zoom in conducting her consultations and also availed of another application to send her prescriptions and P3, who claimed not to be well-versed in technology, attempted to make use of other applications in conducting her telemedicine but she found these other applications harder to use, so she continued to use Zoom instead. For P2, she chose her platform wherein she can conduct telemedicine with video call as she prefers to see her patient's face during consultations.
 - b. *Based on the patient's preference.* The patients also have an influence on the platform used by the physician for telemedicine as some patients are not familiar with using these. For P1, he chose to use Viber for his patients who are not familiar with using the Zoom app. For P6, he conducts telemedicine purely by phone calls as he acknowledges that their patients

may have limited accessibility in making video calls.

- c. *Based on type of practice private practice vs hospital directed practice.* For those in private practice, physicians make use of platforms that they can easily have access to. Those who work in hospitals, on the other hand, were provided with available platforms to practice their telemedicine. P5 recalled that their hospital has availed applications for telemedicine. P6 stated that at their hospital, they make use of an online program to manage telemedicine scheduling. This program was developed for the hospital's use as they transition their face-to-face consultations to telemedicine.
- d. *Electronic medical record (EMR) use.* Some physicians have started digitizing their patient's medical information as they transition to using telemedicine outside of their clinics. P1 stated that having his patient charts digitized would make it accessible and convenient for him to do telemedicine outside his clinic.

5. Unstable connection: different connectivity use in telemedicine

- a. *Internet connectivity use.* It became evident that their concerns on patient communication and understanding were aggravated by internet connectivity problems. P1 has personally experienced such concern. For P8, she views such events like power outages as inevitable in the shift of her practice, while P2, on the other hand, saw two sides to the problem, explaining that it is either her or her patients who are struggling.
- b. *Mobile network connectivity use.* The different platforms that were chosen or utilized by the physicians also relied on their mobile network subscriptions and the quality of signal they get from them. P6 and P8 specifically relate to this as they mainly use cell phones in their practice. For P6, he expressed that the poor signal, along with his older patients not being tech savvy, contributed to the difficulty in relying on mobile networks. In P5's case, she

uses both internet connection and mobile network connection on the same level. She expressed having to go on rounds at the hospital, aside from her teleconsultations. She added that there was a need for an extra telecommunication provider during her phone consultations.

- c. *Communication woes: troubleshooting as an added physician responsibility.* Physicians had to navigate the platforms that they are using as well as learn how to fix the problems that come with it. Attempts to handle connectivity problems include rescheduling the appointments or recontacting the patients in order to finish the consultations. P5 laid out how she and her subordinate handle disconnected calls and P6 echoed this rescheduling solution and further added that he ends up using his personal phone in order to efficiently get back to his patient in times of disconnection. In P8's practice, her hospital's system allows her to communicate with her colleagues whenever problems on her end rises. She explained that she often relies on them every time her connection or signal is inadequate. Regarding the issue of encountering blurry pictures, P7 naturally stated that her only recourse is to ask the patient to resend them.

6. Crossing the boundaries between work and personal lives

- a. *Bringing the work home: the disruption of work-life balance.* Physicians began conducting telemedicine within the safety of their homes. P1 recalled having to bring home patient charts in order to properly facilitate online patient consultations during the various community lockdowns. For P4, it is not a matter of bringing the work home, but not being able to finish her work until the end of the night; there is no longer a clear cut-off for when the workday ends and her personal life begins. This transition of leaving work at the office and taking it into the private sanctuary of a home was the beginning of the blurring and subsequent breaking of the boundaries

between home and work life. P6 described it as that it is a strain since you have to bring work at home.

- b. *The gray area: patient's encroachment of doctor's time and availability.* Without the presence of a physical clinic to go to, physicians became more accessible. While this may have been a benefit for patients, it became a source of discontent for physicians like P8 and P5. Physicians have tried to reset the boundaries that once existed during physical consultations. A common thread that most physicians seem to have noticed is that the number given to the patients becomes misconstrued as an emergency hotline rather than the doctor's contact information (P7). This so-called abuse also comes from the lack of compensation for the physician's time. P5 noticed that, despite her efforts to do her duty as a physician, patients take advantage of the flexibility of teleconsulting. P7 claimed that the consistent break in a physician's boundaries is the worst part of telemedicine.
- c. *Measures taken to prevent exploitation by patients.* Physicians began creating and implementing their own strategies in order to reinstate the boundaries that had been severely broken during the pandemic. For P5, her definition of telemedicine changed drastically after having her boundaries as a physician invaded several times by patients. P8 has been keen in identifying fake RT-PCR results during her practice of telemedicine and began utilizing the following strategy to protect her license as a physician. For those who can afford to do so, new phone lines had to be purchased to maintain their privacy which P2 had to do, not only for herself, but also for her husband and their secretary while some physicians chose not to allow patients to contact them; rather, they would have the patients contact their secretary. Others set up strict rules for payment in order to ensure that they would get proper compensation for their work. P5 established a policy for her patients, stipulating that payment must be made in advance.

7. Acknowledgement of telemedicine as a viable option

- a. *Limited options of practice and alternatives as driver of telemedicine use.* However, since it quickly became the dominant practice at the onset of the pandemic, the physicians had to learn how to do telemedicine either on their own or under the instruction of the hospital they are attached to as soon as they could. P6 emphasized that the COVID-19 preventive guidelines have had an impact on the feasibility of in-clinic consultations. Likewise, P8 addressed the challenges posed by safety guidelines, social distancing measures, and restricted transportation mobility in the context of continuing in-clinic consultations. The recurring theme in their sentiments is the limited availability of alternative options.
- b. *Exceptions to Telemedicine use.* Although telemedicine has been the dominant practice, exemptions are made for special populations such as pregnant patients, illiterate patients, and patients in medical emergencies. Taking this factor into consideration, telemedicine and face-to-face consultation are considered not mutually exclusive.
- d. *Similarities between face-to-face and telemedicine.* It would do well to state that there are some similarities between face-to-face consultations and telemedicine. P6 stated that they proceed with the rest of the consult as if it were an actual consult. P3 also presented something similar regarding her practice.
- c. *Face-to-face as a customary mode of practice.* The integration of telemedicine in the customary face-to-face practice was explored by P6; however, hesitancy on the large dependence on telemedicine use remains as also P8 echoes this same sentiment. In terms of face-to-face consultation as the standard of practice, P1 explained that it was largely due to the training that current physicians have. Similarly, P6 believes that practice of medicine face-to-face with a patient is the standard of practice.

- e. *Looking ahead: telemedicine is here to stay.* The COVID-19 pandemic presented many challenges, but it also forced many changes. P1 acknowledges that, despite the challenges associated with telemedicine, it is a mode of healthcare that should become a permanent fixture in the future.

Discussion

Understanding telemedicine as part of medical practice

A common trend among the physicians interviewed is the lack of awareness with regards to telemedicine prior to the pandemic but in reality, they were already practicing it but were just unaware. Telemedicine has been around in the Philippines since the 1960s, in the form of telephones, beepers, and eventually cellular phones and short messaging systems (SMS).⁶ As early as 2008, the University of the Philippines (UP) with the National Telehealth Center (NTHC) was already employing telemedicine through SMS and in 2013, the Philippine government was able to establish an e-health strategic framework.⁸

Efforts made to bridge the gap of telemedicine

A shortage of trained professionals in telehealth in developing countries posed a strain in adapting to the new medium of consultation.²⁷ The lack of standards in practicing telemedicine was recognized by Picot and emphasized the importance of training healthcare professionals in videoconferencing, remote telemedicine, health information structures, tele-imaging, and home telecare to achieve the minimum competencies of practicing telemedicine.²⁸

The importance of training residents was also verbalized by the physicians. This was consistent with the study about the importance of training residents in the use of telepsychiatry which showed that residents who did not receive training needed for virtual consultations are less competent than those who were trained.²⁹

Results showed that physicians underwent research and training to learn how to properly conduct telemedicine in their respective practices by attending webinars hosted by local and international universities while others opted for self-learning through reading journals.¹¹ These virtual consultations did not

just affect the physicians and patients, but also the clerical staff members. Data showed that personal secretaries of the participants handled scheduling appointments, rescheduling missed consultations, receiving laboratory results and informed consent, as well as billing of the consultation. This was consistent with the study which showed that clerical staff had to develop new workflows to maintain secretarial work in light with the shift to the digital platform.³⁰ They were trained to use Zoom to identify and address logistical challenges in patient data encoding using EMR, scheduling, and streamlining communication between providers and staff.

Transitioning to digital consultations did not compromise the confidentiality and autonomy of patients, both of which are essential ethical rights. Some participants in the study required their patients to provide a signed informed consent before any teleconsultation began. This is stressed in another study.³¹ This ensured that patients acknowledged and gave consent to the physician to retrieve any essential personal information. This also protected their rights as it included the confidentiality of retrieved data. Some participants in the study did not require a signed informed consent but opted for verbal consent which was consistent with previous study. showing that consent can either be in the oral or written forms under certain circumstances.³²

Physicians now conduct consultations outside their clinics and inside their homes. Creating a workplace that simulates a set-up similar to a physical consultation sets the professional tone for both physician and patients. Participants of the study chose a private room to avoid background noise that can disrupt the teleconsultation. This was seen in the another study which stated that most telemedicine clinics were likely just converted rooms from already existing rooms that were well-lit, had no background clutter, and no competing sounds.³³

The virtual patient: navigating medicine without physical contact

Given that physical examination of the patient has been part of the routine medical checkup, the participants expressed that the inability to perform physical examination was a glaring difference and adjustment in adapting to a remote consultation setup. This led to their dependency on the patient's history and results of laboratory tests and imaging. It limited

the data gathered to arrive at a definite diagnosis and subsequently, an appropriate management plan.

As seen in a study where gathered data and medical histories from teleconsultation may be incomplete if totally reliant on the patient's interpretation of their condition.³⁴ Another study on pediatricians practicing telemedicine were anxious that because they were not being able to perform physical examination, they might fail making an accurate diagnosis.²³

The physicians also cited the limitation or lack of nonverbal cues as a challenge brought about by the transition to telemedicine. This was also associated with the limitations of physical examination given that observations of certain organ systems are not always accurate even if observed through a video call; more so if based on audio alone. Despite its limitations, teleconsultation done through video calls is the preferred setup of the physicians as it allows them to do a general survey of the patient and observe their body language. Those who do teleconsultations purely through audio calls had expressed difficulty in establishing rapport given the absence of visual cues. Delivering emotional support via phone call was also challenging as it lacked the physical aspect of comforting a patient. This is consistent with the study which found that the lack of physical closeness affected the physicians' ability to perform rituals of care that are essential in building patient-doctor relationship.³⁵

To address the limitation of nonverbal communication, the physicians made efforts to ensure that their patients had a clear understanding of their medical advice. This included using media and language that would be best understood by their patients. Another initiative done was summarizing the important points of the teleconsultation by reiterating whatever needed clarification and clearly enunciating the words. As the practice of telemedicine brought the fear that it would not be an effective medium for consultation, necessary adjustments were made to ensure patient understanding of their condition and the management advised.³⁶

Despite its limitations or lack of nonverbal cues, teleconsultation done through video calls is the preferred setup of the physicians as it allows them to do a general survey of the patient and observe their body language. Those who do teleconsultations purely through audio calls had expressed difficulty in establishing rapport given the absence of visual cues. Delivering emotional support via phone call

was also challenging as it lacked the physical aspect of comforting a patient. To address the limitation of nonverbal communication, the physicians made efforts using media and language that would be best understood by their patients, summarizing the important points of the teleconsultation by reiterating whatever needed clarification and clearly enunciating the words.

Most of the physicians noted that teleconsultations are shorter compared to their usual face to-face encounters as seen in a couple of studies.^{35,37} This is due to the limited physical examination and rapport building in teleconsultations. The longer duration of consultation during in-person visits was attributed to the pleasantries exchanged between the physician and patient before and after consultation, which has become less frequent during teleconsultations.

Digital media platforms: telemedicine's tools

A study showed that age played a big factor in digital-divide, wherein older people are more apprehensive in using digital technology.³⁸ However, results from the current study showed that even participants aged 41-60 were well-adept in using different digital platforms maybe because they use internet in their in their jobs and daily lives to a certain degree.³⁹ The study saw that it is the low socioeconomic status, that may be a bigger factor than age in digital divide. The choice on which digital platform to use is influenced by physician preferences. Some participants chose platforms based on their familiarity while some decided based on the tool's convenient features. Data revealed that most of the participants used Zoom or Viber, applications that include audiovisual features, for teleconsultation. One study showed that video consultations resulted in greater diagnostic accuracy, fewer medication errors, and reduced readmissions when compared to telephone consultations.⁴⁰ Moreover, of current study results showed that patient's limited access to technology prohibited the use of video consultation. Thus, telemedicine was purely conducted through telephone calls. The patient's digital illiteracy or inability to navigate the platforms were also emphasized, explaining the preference of some patients to use telephone instead of video consultations.

Furthermore, data showed that a participant's hospital developed a software program that did not need internet connectivity to aid their telehealth system. The existence of these homegrown programs

coupled with a demographic of non-technologically adept patients pushed participants practicing in public hospitals to use telephone over video consultations as compared to participants in private practice who used platforms with video features for telemedicine. The hospital's telemedicine infrastructure contributed to the choice between telephone and video consultation.⁴¹ Those who practiced in public hospitals used telephone over video consultations as compared to participants in private practice who used platforms with video features for telemedicine. The use of electronic medical records (EMR) has increased with the industry shifting to telehealth. All data seen in a typical medical chart such as patient information, diagnoses, and management were being digitized to allow integration with telehealth.

Unstable connection: different connectivity use in telemedicine

Since most platforms used were online communications applications, having a good internet connection was a necessity for the participants. Internet connectivity problems such as those caused by power outages, unforeseen natural events, or simply weak internet signals posed problems in ensuring that the patients adequately understood the course of the consultation including the diagnosis, management, and instructions. Some physicians used cellular phones in conducting teleconsultations, and thus heavily relied on their mobile network subscriptions. Like with internet use, poor network reception has posed difficulties for physicians in communicating with their patients. As connectivity issues have been unavoidable in the practice of telemedicine, physicians had to learn how to troubleshoot these technical problems such as rescheduling appointments, recalling patients, and asking assistance from one's colleagues when these problems arise. As the pandemic restrictions have left telemedicine as the only alternative to face-to-face consultations, physicians have been given an added responsibility of addressing technical problems in addition to adjusting their usual medical practice for a telemedicine setting.²²

Crossing the boundaries between work and personal lives

Participants noted a blurring of the lines between home and work, as revealed in the interviews.

Examples included working longer hours to manage prescription writing and bringing work-related documents, such as patient charts, home. However, enforcement of personal boundaries may still be difficult or might not come as naturally, as Filipino culture, classified as collectivist, tends to value being self-sacrificing, dependable, generous, and helpful to others. Indeed, many participants, despite the challenge of working out of office hours, ultimately still attended to the calls of the patients.

Acknowledgement of telemedicine as a viable option

Face-to-face consultations are currently the "gold standard" over telemedicine. Additionally, by switching to telemedicine long-term, it may be possible for Filipino healthcare professionals to run into some unaddressed problems inherent to the format. A study outlined at least four: (1) that the long-term consequences of telemedicine (especially with regard to mortality and functional status) are still unknown; (2) that the factors that determine the effectiveness of a telemedicine service or program are still unknown, which may lead to excessive spending; (3) that legislature and similar regulatory guidelines have yet to catch up, which may leave physicians to navigate legal gray areas with little guidance; and (4) that it will ultimately be difficult to build trust and rapport between physician and patient over a screen.³⁶ This final point in particular is something that has been brought up by participants, who found it difficult to connect with or console patients online.

However, some of the interviewed physicians pointed out that telemedicine is not an alternative to face-to-face consultations, specifically in cases of pregnant, illiterate, and emergency patients. Illiteracy was found to be a hindrance to telemedicine as seen in a study (Parajuli R, Doneys) while being unable to act quickly during emergency situations was the concern of physicians in another study.^{21,38} Few studies saw advantages in the use of telemedicine for pregnant patients relating to gestational glycemic control and obstetric COVID-19 patients.^{42,43}

The research aimed to address the lack of studies in the Philippines regarding telemedicine, specifically from the physician's point of view. The experiences shared by the interviewed physicians showed an awareness of what telemedicine is, even prior to the pandemic, but recognizing that it is not an alternative but the only viable option to continue

practicing medicine during the pandemic. Efforts were made to prepare for the transition from face-to-face consultations into telemedicine, mainly to bridge the gap of telemedicine. The physician's practice relied on diverse platforms, ranging from voice to video calls and the utilization of EMR, dictated by patient and doctor preferences and their type of practice, may it be public or private. One of the main limitations of telemedicine was the lack of physical contact, which hindered rapport building and physical examination, leading to the shift in reliance on history and diagnostic tests. Unstable internet connection was also a challenge, as frequent troubleshooting became an added responsibility to the physician. Lastly, the predominance of telemedicine has led to the breach in the boundaries of the physician's work and personal life, prompting them to take measures to mitigate patient exploitation.

References

1. Kemp S. Digital 2020: The Philippines - datareportal – global digital insights [Internet]. DataReportal. DataReportal – Global Digital Insights; 2020 [cited 2020 Apr 29]. Available from: <https://datareportal.com/reports/digital-2020-philippines>
2. Papoutsis E, Giannakoulis VG, Ntella V, Pappa S, Katsaounou P. Global burden of COVID-19 pandemic on healthcare workers. *ERJ Open Res* 2020 Jul 6;6(2):00195-2020. doi: 10.1183/23120541.00195-2020.
3. Hurst EJ. Evolutions in telemedicine: From smoke signals to mobile health solutions. *J Hosp Libr* 2016 Apr 2;16(2):174–85.
4. Combi C, Pozzani G, Pozzi G. Telemedicine for developing countries. *Appl Clin Inform* 2016 Nov 2;7(4):1025–50.
5. Omnibus Guidelines on the Implementation of community quarantine in the Philippines. Official Gazette [Internet]. [cited 2020 April 29] Available from: <https://www.officialgazette.gov.ph/downloads/2020/05may/20200429-Omnibus-Guidelines-on-the-Implementation-of-Community-Quarantine-in-the-Philippines.pdf>
6. Fernandez-Marcelo PG, Ho BL, Faustorilla JF Jr, Evangelista AL, Pedrena M, Marcelo A. Emerging eHealth directions in the Philippines. *Yearb Med Inform.* 2012;7:144-52.
7. Adler-Milstein J, Kvedar J, Bates DW. Telehealth among US hospitals: several factors, including state reimbursement and licensure policies, influence adoption. *Health Aff (Millwood)* 2014 Feb;33(2):207-15. doi: 10.1377/hlthaff.2013.1054.
8. De Castro L, Lopez AA, Hamoy G, Alba KC, Gundayao JC. A fair allocation approach to the ethics of scarce resources in the context of a pandemic: The need to prioritize the worst-off in the Philippines. *Dev World Bioeth* 2021 Dec; 21(4):153-72. doi: 10.1111/dewb.12293. Epub 2020 Sep 23.
9. Lin CC, Dievler A, Robbins C, Sripipatana A, Quinn M, Nair S. Telehealth in health centers: Key adoption factors, barriers, and opportunities. *Health Aff (Millwood)*. 2018 Dec;37(12):1967-74. doi: 10.1377/hlthaff.2018.05125.
10. Scott Kruse C, Kareem P, Shifflett K, Vegi L, Ravi K, Brooks M. Evaluating barriers to adopting telemedicine worldwide: A systematic review. *J Telemed Telecare* 2018 Jan;24(1):4-12. doi: 10.1177/1357633X16674087. Epub 2016 Oct 16.
11. Isip-Tan IT, Sarmiento F, Fong M, Guzman A, Herber JM, Marcelo A, et al. Telemedicine: guidance for physicians in the Philippines. [Internet] UP College of Medicine – Medicine Information Unit; 2020 [cited 2020 Nov 1]. Available from: <https://www.philippinemedicalassociation.org/wp-content/uploads/2020/05/1-Telemedicine-for-Health-Professionals.pdf>
12. Department of Health. DOH Boosts Telemedicine Services for NCR; Service to Expand to Other Regions Soon [Internet]. 2020 [cited 2020 Nov 1]. Available from: <http://www.doh.gov.ph/doh-press-release/DOH-BOOST-TELEMEDICINE-SERVICES-FOR-NCR-SERVICE-TO-EXPAND-TO-OTHER-REGIONS-SOON>
13. WHO Global Observatory for eHealth. Telemedicine: Opportunities and developments in member states: Report on the second global survey on eHealth [Internet]. World Health Organization; 2010 [cited 2020 Nov 1]. Available from: <https://apps.who.int/iris/handle/10665/44497>
14. Deldar K, Bahaadinbeigy K, Tara SM. Teleconsultation and clinical decision making: a systematic review. *Acta Inform Med* 2016 Jul 16;24(4): 286-92. doi: 10.5455/aim.2016.24.286-292.
15. Siegel CA. Transforming gastroenterology care with telemedicine. *Gastroenterology* 2017 Apr;152(5):958-63. doi: 10.1053/j.gastro.2017.01.048. Epub 2017 Feb 10.
16. Mahajan V, Singh T, Azad C. Using telemedicine during the COVID-19 pandemic. *Indian Pediatr* 2020 Jul 15;57(7):652-7. Epub 2020 May 14.
17. Shamim-Uzzaman QA, Bae CJ, Ehsan Z, et al. The use of telemedicine for the diagnosis and treatment of sleep disorders: an American Academy of Sleep Medicine update. *J Clin Sleep Med* 2021 May 1;17(5):1103-7. doi: 10.5664/jcsm.9194.
18. Malasanos T, Ramnitz MS. Diabetes clinic at a distance: Telemedicine bridges the gap. *Diabetes Spectr* 2013;26(4):226–31. doi: 10.2337/diaspect.26.4.226
19. Flodgren G, Rachas A, Farmer AJ, Inzitari M, Shepperd S. Interactive telemedicine: effects on professional practice and health care outcomes. *Cochrane Database Syst Rev* 2015 Sep 7;2015(9):CD002098. doi: 10.1002/14651858.CD002098.pub2.
20. Downes MJ, Mervin MC, Byrnes JM, Scuffham PA. Telemedicine for general practice: a systematic review protocol. *Syst Rev* 2015 Oct 5;4:134. doi: 10.1186/s13643-015-0115-2.
21. Parajuli R, Doneys P. Exploring the role of telemedicine in improving access to healthcare services by women and girls in rural Nepal. *Telemat Inform* 2017;34(7):1166–76. doi: 10.1016/j.tele.2017.05.006.

22. Kadir MA. Role of telemedicine in healthcare during COVID-19 pandemic in developing countries. *TMT* [Internet]. 2020 Apr 30 [cited 2020 Nov 5];5(2). Available from: <https://telehealthandmedicinetoday.com/index.php/journal/article/view/187>
23. Ohannessian R, Duong TA, Odone A. Global telemedicine implementation and integration within health systems to fight the COVID-19 pandemic: A call to action. *JMIR Public Health Surveill* 2020;6(2):e18810. URL: <https://publichealth.jmir.org/2020/2/e18810>. doi: 10.2196/18810
24. Koonin LM, Hoots B, Tsang CA, et al. Trends in the use of telehealth during the emergence of the COVID-19 pandemic - United States, January-March 2020. *Morb Mortal Wkly Rep* 2020 Oct 30;69(43):1595-9. doi: 10.15585/mmwr.mm6943a3. Erratum in: *Morb Mortal Wkly Rep*. 2020 Nov 13;69(45):1711.
25. Willems LM, Balcik Y, Noda AH, et al. SARS-CoV-2-related rapid reorganization of an epilepsy outpatient clinic from personal appointments to telemedicine services: A German single-center experience. *Epilepsy Behav* 2020 Nov;112:107483. doi: 10.1016/j.yebeh.2020.107483. Epub 2020 Oct 6.
26. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006;3(2):77-101.
27. Scott RE, Mars M. Telehealth in the developing world: current status and future prospects. *Smart Homecare Technology and Telehealth* 2015 Feb 2; 3: 25-37. doi: 10.2147/SHTT.S75184
28. Picot J. Meeting the need for educational standards in the practice of telemedicine and telehealth. *J Telemed Telecare* 2000;6 Suppl 2:S59-62. doi: 10.1258/1357633001935608.
29. Saeed SA, Johnson TL, Bagga M, Glass O. Training residents in the use of telepsychiatry: Review of the literature and a proposed elective. *Psychiatr Q* 2017 Jun; 88(2):271-283. doi: 10.1007/s11126-016-9470-y.
30. Barney A, Buckelew S, Mesheriakova V, Raymond-Flesch M. The COVID-19 pandemic and rapid implementation of adolescent and young adult telemedicine: Challenges and opportunities for innovation. *J Adolesc Health* 2020 Aug;67(2):164-71. doi: 10.1016/j.jadohealth.2020.05.006. Epub 2020 May 14.
31. Nittari G, Khuman R, Baldoni S, et al. Telemedicine practice: Review of the current ethical and legal challenges. *Telemed J E Health* 2020 Dec;26(12):1427-37. doi: 10.1089/tmj.2019.0158. Epub 2020 Feb 12.
32. Kotsopoulou A, Melis A, Koutsompou VI, Karasarlidou C. E-therapy: The ethics behind the process. *Procedia Comput Sci* 2015;65:492-9. doi: 10.1016/j.procs.2015.09.120
33. Krupinski EA. Telemedicine workplace environments: Designing for success. *Healthcare (Basel)* 2014 Feb 24;2(1):115-22. doi: 10.3390/healthcare2010115.
34. Colbert GB, Venegas-Vera AV, Lerma EV. Utility of telemedicine in the COVID-19 era. *Rev Cardiovasc Med* 2020 Dec 30;21(4):583-7. doi: 10.31083/j.rcm.2020.04.188.
35. Gomez T, Anaya YB, Shih KJ, Tarn DM. A qualitative study of primary care physicians' experiences with telemedicine during COVID-19. *J Am Board Fam Med* 2021 Feb;34(Suppl):S61-S70. doi: 10.3122/jabfm.2021.S1.200517.
36. Kahn JM. Virtual visits--confronting the challenges of telemedicine. *N Engl J Med* 2015 Apr 30;372(18):1684-5. doi: 10.1056/NEJMp1500533.
37. Ananthakrishnan AN, Singh S. The doctor will call you now! Telemedicine in the midst of a pandemic. *Clin Gastroenterol Hepatol* 2020 Jul;18(8):1688-90. doi: 10.1016/j.cgh.2020.04.031. Epub 2020 Apr 18.
38. Quimba FMA, Calizo SC. Going digital: From innovation to inclusive growth in the Philippines. *PIDS Discussion Paper Series* [Internet]. 2018 Nov; [cited 2020 Apr 29], Available from: <https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsdps1819.pdf>
39. Paul G, Stegbauer C. Is the digital divide between young and elderly people increasing? *First Monday* 2005 Oct 3;10(10). doi: 10.5210/fm.v10i10.1286
40. Rush KL, Howlett L, Munro A, Burton L. Videoconference compared to telephone in healthcare delivery: A systematic review. *Int J Med Inform* 2018 Oct;118:44-53. doi: 10.1016/j.ijmedinf.2018.07.007. Epub 2018 Jul 25.
41. Rodriguez JA, Betancourt JR, Sequist TD, Ganguli I. Differences in the use of telephone and video telemedicine visits during the COVID-19 pandemic. *Am J Manag Care* 2021 Jan;27(1):21-6. doi: 10.37765/ajmc.2021.88573.
42. Chilelli NC, Dalfrà MG, Lapolla A. The emerging role of telemedicine in managing glycemic control and psychobehavioral aspects of pregnancy complicated by diabetes. *Int J Telemed Appl* 2014; 621384. doi: 10.1155/2014/621384. Epub 2014 Sep 10.
43. Reforma LG, Duffy C, Collier AY, et al. A multidisciplinary telemedicine model for management of coronavirus disease 2019 (COVID-19) in obstetrical patients. *Am J Obstet Gynecol MFM* 2020 Nov;2(4):100180. doi: 10.1016/j.ajogmf.2020.100180. Epub 2020 Jul 25.