Barriers and Facilitatorsfor Tele-health Consultations during COVID Times: A Multi-State Exploratory Study from India.

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Abstract

Introduction: COVID-19 derailed the clinical care delivery system for regular outpatient consultancy services across globe. Specially designed tele-health applications as well as regular mobile phone-based applications (apps) have been attempted by various healthcare providers (HCPs) to cater to the needs of their patients especially during the early emerging pandemic period. **Methods:**We attempted to study the barriers and facilitators in utilizing technology-aided tele-healthoptions in a multi-state.mixed-methods study through web-based survey followed by a semi-structured interview. Qualitative data were transcribed, coded, analyzed independently by two team members. Key themes were identified using inductive thematic analysis. **Results:**We could register the responses of 98 HCPs (web-survey) from 9 major states in India on various parameters and conducted personal and telephonic interviews with 30 HCPs to derive qualitative insights. Tele-health services tripled up during the early phases of pandemic emergence enabled by Tele Medicine guidelines released by Government of India (GoI). Most of the younger generation HCPs especially female care providers have continued their services through early adoption of tele-health applications and opined that this option will continue as an alternative in service delivery into the future. **Conclusions:** The results suggest the enormous future scope for tele-health platforms and thereby the necessity to set-up processes for effective healthcare service delivery at lesser cost and time.

Key words

COVID-19; tele-health applications; healthcare service delivery; digital platforms

Introduction

COVID-19 (COVID), the ongoing pandemic of 2020 forced health sector to adapt newer feasible strategies to continue operations and sustain health and welfare of population. Containment of spread of COVID-19 disease being the prime concern of government and private sector hospitals, the treatment of patients with non-COVID conditions have been relegated to the sidelines.[1,2]Regular consulting and follow up services have been burdened with requirement of protective equipment, repeated COVID-19 testing and disruption in functioning of the other medical practices.[2]

The World Health Organization (WHO) recognized this impediment to healthcare services and presented Telemedicine as a means to bridge the gap and strengthen healthcare systems response to the global pandemic.[3] A new WHO report claims that Telemedicine should be made available as an alternative service delivery option for extending clinical support. Till recently a sparingly accessed medium, it outflows with now in multitudes, making the best use of ever-emerging digital consultation platforms. Telemedicine slowly gained momentum in India with the initiatives taken by ISRO (Indian Space Research Organization), DIT (Department of Information Technology) and MCIT (Ministry of Communications and Information Technology).[4-7] History of telemedicine dates back to the year 1999 in India, although the Indian Government sanctioned telemedicine in the year 2001.[8] ISRO was the avant-gardist with the introduction of Telemedicine Pilot Project nationwide in 2001, linking remote/ rural medical hospitals and Mobile Units to major specialty hospitals in cities and towns through Indian satellites.[5,6,9] Today, ISRO connects about 384 hospitals and 60 specialty hospitals to 306 remote/ rural/ district medical college hospitals and 18 mobile telemedicine units.[6,10] According to the recent study report by MFMR (Market

Research Future), telehealth market is expected break records with 22.74% growth rate from the year 2016 to 2024 and anticipated to be about $16,173.8 million.[8]

Tele-health involves the delivery as well as facilitating a wide range of health and health-related services including medical care, self-care using telecommunications and digital communication technologies.[11] Apart from its easy accessibility, including remote coverage, less travel and expenditure, tele-medicine is rapidly growing and is increasingly preferred form of consultation by both care providers and clients, owing to the forceful nature of COVID-19 pandemic due topromotion by government bodies globally.[12-14] To foster the outpouring influx of patients and decongest the situation, tele-health practices were identified to be essential and so, MoHFW and NITI Aayog guidelines pertaining to tele-health practice were published on 25 March 2020.[15]The latest advancement has been phenomenal since the COVID-19 quarantine suggesting that the boom in the uptake could only be attributed to the 2020 contagion.[14] Not all health practitioners are technological experts, neither are all patients knowledgeable about virtual consultations and interference in doctor's spot-on diagnosis and patient physical examination could be considered a possible tailback to the progress of telemedicine in India.[15,16] Indian authors report benefits and limitations in the practice of telemedicine.[17-19]

Objectives

The objective of this study is to assess the barriers and facilitators for tele-health consultations among multi-disciplinary healthcare professionals during COVID-19 pandemic across India.

Materials and Methods

Design: We undertook an explorative mixed-methods study[20]with aquantitative surveyusing Google Forms followed by personal interviews of 30 consenting HCPs. These interviews were both personal(with adequate social distancing, face mask and sanitization practices in place) and phone-based interviews after obtaining verbal informed consent (15 each) with prior appointment.

Recruitment of survey participants: Purposive, convenient sampling and snow-balling technique was used to recruit study participants in this study and survey link was widely disseminated by leveraging professional contacts using social media networks.

Survey Tool Design: After review of literature, a web-based survey questionnaire was designed in Google Forms, which included brief description about the study, participant information sheet with informed consent, socio-demographic features, education and medical professional profile, information related to tele-health consultations, awareness about government guidelines on tele-health practice. The survey was actively available from August-2020 to October-2020 through the link: https://docs.google.com/forms/d/e/1FAIpQLSddHonCJ-nhccmmWaainzNh5uFNrVC1Cttmvv1qFQ9AcbZY9g/viewform?usp=sf_link for receiving responses.

Follow-up interviews with healthcare professionals: The survey also included a question about the willingness of the participants to schedule personal or telephone interviews to further explore in-depth about the tele-health consultation experiences and to document unique case scenarios via telehealth medium during the COVID-19 pandemic. The sample size was pre-determined as 30 and consenting subjects were

contacted by Principal Investigator (PI) after explaining the protocol through pre-scheduled interviews during September to October 2020. PI conducted semi-structured interviews in English language using interview guide. Topics broadly covered the tele-health practices prior to COVID-19 pandemic; adoption of tele-health practices since March 2020; the different platforms and apps used personally for practice of tele-health; volume of tele-health consultation in a week; barriers and facilitators for tele-health practice; unique case study experiences managed using tele-health medium/s during pandemic; perceptions regarding the future scope/implications of tele-health in their core specialty of clinical practice; satisfaction of clients and care providers with tele-health practice etc.

Participants were asked to provide informed verbal consent to audio-record the interviews and were assured of confidentiality of personal identifiers. A typical interview lasted between 10-20 minutes and the qualitative study was terminated after completing 30 interviews of healthcare providers from multiple-specilaties..

Interviews: Interviews were transcribed verbatim from audio recordings, read independently by two authors (STS, VC), and coded inductively for rapid qualitative data analysis. Multiple studies compared rapid and in-depth qualitative analyses and are shown to be comparable.[21-22] A template was developed to gather the summary from each interview based on the interview guide and organized by the codes derived from the key interview questions. The template is populated by the summary of the data extracted from the transcripts of the interviews independently by two authors (STS, VC) and also included unique quotes. This template enabled to visually understand the patterns and themes and guided the conclusions by adequate interpretation of the subjects' tele-health experiences.

Ethics Approval:The study was approved by an independent institutional Ethics Committee Ref No: 5/2020), Radianz Health Care and Research, Madurai, Tamil Nadu.

Data Analysis:Data was analyzed using IBM SPSS v20.0 STATA (Version 14.0) statistical package. Descriptive statistics were performed both on quantitative and qualitative data. Qualitative data was subjected to rapid inductive thematic analyses.

Results

Demographics: Ninety-eight participants responded to the survey, of which 44 (45%) were women, 54 (55%) were men. The median age of female respondents was 31 years (mean=34.4, SD=10.2 and range=22-63 years). While the median age of male respondents was 37 years with mean, standard deviation and range at 37.0, 8.2 and 24-60 years respectively. Majority of the respondents (76, 77.6%) were from Allopathic stream followed by Dentists (18, 18.4%). Majority of the respondents were from Tamil Nadu (80, 81.6%), working in private sector (72, 73.5%) and were involved in Covid-19 duty (56, 57.1%) *(Table 1).*Nearly a quarter of participants involved in Covid-19 duty were placed in out-patient department (11, 26.2%) followed by in Fever/Flu clinics (8, 19.0%) and in Screening services (6, 14.3%) etc. *(Table 2).*

Table 1. Demographics of the study participants (n=98)

	Female		**Male**		**Total**	
	No.	**Col %**	**No.**	**Col %**	**No.**	**Col %**
	44	**100%**	**54**	**100%**	**98**	**100%**
Marital Status						
Married	28	63.6%	39	72.2%	67	68.4%
Single	14	31.8%	15	27.8%	29	29.6%
Having partner (In relationship)	2	4.5%	0	0.0%	2	2.0%
Medical Qualification						
Allopathy-MBBS	9	20.5%	6	11.1%	15	15.3%
Allopathy-PG	24	54.5%	37	68.5%	61	62.2%
Dentist-BDS	7	15.9%	8	14.8%	15	15.3%
Dentist-MDS	2	4.5%	1	1.9%	3	3.1%
PhD scholar	1	2.3%	0	0.0%	1	1.0%
BHMS	0	0.0%	1	1.9%	1	1.0%
Physiotherapist	1	2.3%	0	0.0%	1	1.0%
Social worker	0	0.0%	1	1.9%	1	1.0%
Sector						
Government	12	27.3%	14	25.9%	26	26.5%

Private	32	72.7%	40	74.1%	72	73.5%
State						
Tamil Nadu	39	88.6%	41	75.9%	80	81.6%
Telangana	2	4.5%	3	5.6%	5	5.1%
Madhya Pradesh	0	0.0%	3	5.6%	3	3.1%
Haryana	0	0.0%	2	3.7%	2	2.0%
Maharashtra	1	2.3%	1	1.9%	2	2.0%
Delhi	0	0.0%	1	1.9%	1	1.0%
Gujarat	0	0.0%	1	1.9%	1	1.0%
Karnataka	1	2.3%	0	0.0%	1	1.0%
Uttar Pradesh	0	0.0%	1	1.9%	1	1.0%
Not Specified	1	2.3%	1	1.9%	2	2.0%
Are you on Covid-19 duty?						
Yes	19	43.2%	23	42.6%	42	42.9%
No	25	56.8%	31	57.4%	56	57.1%

Table 2. Type of roles in Covid-19 duties (n=42)

	Female		**Male**		**Total**	
	No.	**Col %**	**No.**	**Col %**	**No.**	**Col %**
	19	**100%**	**23**	**100%**	**42**	**100%**
Role in Covid-19 Duty?						
Regular OPD/Academic Work	7	36.80%	4	17.40%	11	26.20%
Fever/Flu Clinic	0	0.00%	8	34.80%	8	19.00%
Screening OPD	3	15.80%	3	13.00%	6	14.30%
IP ward / Isolation wards	1	5.30%	4	17.40%	5	11.90%
Public health-Monitoring, Surveillance and Health Education	4	21.10%	1	4.30%	5	11.90%
ICU services	1	5.30%	1	4.30%	2	4.80%
Coordination of International Travelers	0	0.00%	1	4.30%	1	2.40%
Emergency services/Casualty	1	5.30%	0	0.00%	1	2.40%
Handling Blood, body fluids and tissue for processing and testing	0	0.00%	1	4.30%	1	2.40%
Laboratory professional	1	5.30%	0	0.00%	1	2.40%
Ultrasound	1	5.30%	0	0.00%	1	2.40%

Tele-health practices:Only one third (29, 29.6%) of the respondents had a practice of tele-health consultations at a frequency of minimum two consultations per week before the COVID-19 pandemic began, which incidentally was almost equally observed across genders. Among study respondents, nearly 31% had 8 to 30 consultations per month and around 17% had 30-60 consultations per month during COVID pandemic. Two-thirds (58, 59.2%) of the respondents had participated in tele-health consultations and had 1-2 consultations per day (36, 61.1%) during the COVID-19 pandemic. Approximately 40% of the consultations were limited to less than 30 minutes, followed by around 21% of

which involved 30-60 minutes using telehealth consultations. Less than half of the practitioners (46, 46.9%) obtained consent from the patients. It was also observed that only a third of the practitioners (32, 32.7%) were maintaining digital log record of tele-health consultations which was little higher among male (21, 38.9%) than female (11, 25.0%) HCPs (*Table 3*).

Table 3. Telehealth practices and perceptions (n=98)

	Female		**Male**		**Total**	
	No.	**Col %**	**No.**	**Col %**	**No.**	**Col %**
	44	**100%**	**54**	**100%**	**98**	**100%**
Is Telehealth consultation a common practice (at least two consultations per week before Covid-19?)						
No	31	70.5%	38	70.4%	69	70.4%
Yes	13	29.5%	16	29.6%	29	29.6%
If yes, what is the approximate number of such consultations in a month?						
No	**31**	**70.5%**	**38**	**70.4%**	**69**	**70.4%**
Nil (Zero)	1	3.2%	3	7.9%	4	5.8%
N/A or Blank	30	96.8%	34	89.5%	64	92.8%
4 per month	0	0.0%	1	2.6%	1	1.4%
Yes	**13**	**29.5%**	**16**	**29.6%**	**29**	**29.6%**
8 to 30 per month	3	23.1%	6	37.5%	9	31.0%
30 to 60 per month	0	0.0%	5	31.3%	5	17.2%
60 to 100 per month	0	0.0%	0	0.0%	0	0.0%
100 or more	0	0.0%	2	12.5%	2	6.9%
N/A or Blank	10	76.9%	3	18.8%	13	44.8%
Did you conduct any telehealth consultations in the past months due to impact of Covid-19? Yes/No						
No	17	38.6%	21	38.9%	38	38.8%
Yes	25	56.8%	33	61.1%	58	59.2%
N/A or Blank	2	4.5%	0	0.0%	2	2.0%
If yes, What is the number of tele-health consultations per day?						
1 per day	9	36.0%	10	30.3%	19	32.8%
2 per day	7	28.0%	10	30.3%	17	29.3%
3 per day	2	8.0%	3	9.1%	5	8.6%
4 per day	1	4.0%	0	0.0%	1	1.7%
5 per day	2	8.0%	3	9.1%	5	8.6%
10 per day	0	0.0%	3	9.1%	3	5.2%
20 per day	0	0.0%	2	6.1%	2	3.4%
N/A or Blank	4	16.0%	2	6.1%	6	10.3%
What is the approximate duration of time spent on tele-health consultations per day?						
Less than 30 mins	22	50.0%	19	35.2%	41	41.8%
30 - 60 mins	9	20.5%	12	22.2%	21	21.4%
60 - 120 mins	0	0.0%	3	5.6%	3	3.1%
More than 120 mins	0	0.0%	3	5.6%	3	3.1%
N/A or Blank	13	29.5%	17	31.5%	30	30.6%
Did you obtain the consent?						
Yes	23	52.3%	23	42.6%	46	46.9%
No	8	18.2%	22	40.7%	30	30.6%
N/A or Blank	13	29.5%	9	16.7%	22	22.4%
How do you rate your telehealth consultation experience during Covid-19?						
1. Highly Dissatisfactory	1	2.3%	0	0.0%	1	1.0%
2. Dissatisfactory	2	4.5%	6	11.1%	8	8.2%
3. Neutral	14	31.8%	13	24.1%	27	27.6%
4. Satisfactory	11	25.0%	13	24.1%	24	24.5%
5. Highly Satisfactory	2	4.5%	6	11.1%	8	8.2%
N/A or Blank	14	31.8%	16	29.6%	30	30.6%

How do you believe this Covid-19 lockdown will affect your future career practices?						
1. Complete Change	8	18.2%	10	18.5%	18	18.4%
2. Some Change	26	59.1%	26	48.1%	52	53.1%
3. No Change at all	0	0.0%	4	7.4%	4	4.1%
N/A or Blank	10	22.7%	14	25.9%	24	24.5%
Do you believe telehealth consultations could become an important part of future practices (minimize crowds in OP settings, promote social distancing etc.)						
1. Strongly do not believe	0	0.0%	3	5.6%	3	3.1%
2. Do not believe	5	11.4%	5	9.3%	10	10.2%
3. Neutral	12	27.3%	9	16.7%	21	21.4%
4. Believe	13	29.5%	12	22.2%	25	25.5%
5. Strongly Believe	5	11.4%	11	20.4%	16	16.3%
N/A or Blank	9	20.5%	14	25.9%	23	23.5%

Perception about Tele-health practices and way forward: Approximately one third (32, 32.7%) of the HCPs were satisfied with the tele-health consultation portals they used. More than half of the respondents (52, 53.1%) felt the COVID-19 lockdown will affect their future clinical practice methods and believed that tele-health consultations can become part of their future clinical practice methods. Less than half of the respondents (39, 39.8%) were aware of the Tele-medicine Practice Guidelines issued by Board of Governors and NITI Ayogof which the awareness was little higher among male (26, 48.1%) than female (13, 29.5%) HCPs (*Table 3*).

Qualitative analysis: Thirty healthcare providers from twelve settings participated in the personal interviews. Two thirds (23, 76.7%) of the HCPs were of ≤40 years age, more than half were male HCPs (17, 56.7%), majority from medical (25, 83.4%) compared to minimal from dental (5, 16.6%) background and all of them were exclusively in private practice with less than a third of them engaged (8, 26.7%) in providing COVID-19 care services.Minimal use of tele-health was observed before COVID-19 with half of the HCPs never used tele-health as consultation approach (*Table 4*).Most participants reported using a combination of phone calls with WhatsApp services such as text messages, picturesand video recordings. WhatsApp dominated the tele-health practices due to its wide popularity/availability among clients and ease of

receiving clinical pictures and sending prescriptions as text messages. Phonecalls remain a favorable mode of telehealth consultations and App-based consultations are slowly gaining stronghold among this group of participants (*Table 4*).

Table 4. Telehealth Practices of healthcare providers who were interviewed (n=30)

Characteristic	No. 30	Col % 100%
Pre Covid-19 tele health practices		
None	15	50.0%
1-2 per month	3	10.0%
1-2 per week	8	26.6%
3-5 per week	4	13.4%
Platforms used or preferred		
None	3	10.0%
Only phone calls	6	20.0%
Social media applications*	16	53.3%
Specialized tele health applications#	5	16.7%
Tele health practices during Covid-19		
None	3	10.0%
1-5 per week	15	50.0%
5-10 per week	3	10.0%
>45 per week	9	30.0%

***** *Free social media applications such as WhatsApp and Google Meet; # Paid specialized tele health tools such as Practo etc.*

Specialty-specific challenges in Tele-health practice: Specialists in our study expressed challenges related to practicing telehealth in their core-domains, which are summarized elsewhere in another paper.

Discussion

The findings generated during this study addresses the difference in how the health care professionals perceived and used tele-health before and during the COVID-19 pandemic. In this regard, we have documented its facilitators and barriers during the pandemicperiod as articulated by diverse group of healthcare providers. It is an undeniable fact that the pandemic has both facilitated and imposed this digitalized medium of healthcare delivery system upon the healthcare providers and accelerated its uptake among the patients. In this sequential mixed methods study, in follow-up to web-based survey, structured interviews were conducted with 30 doctors from 7 specialties. The average tele-consultations per month almost tripled during the peak seasons of the

pandemic(wave 1) which reflect a clear understanding as to how tele-medicine came into the spotlight in a short frame of time in accordance with the Telemedicine Practice Guidelines from the Indian Government following the outbreak.[7] The availability of guidelines are fostering the uptake of tele-health practices along with competitive marketing by the digital platforms enabled by wide popularity and reach of socialmedia platforms like WhatsApp.

Tele-health Practices prior and after COVID-19 pandemic:The average tele-consultations per month almost tripled during the peak seasons of the pandemic which is similar to multiple studies during COVID.[24-26] Only 10% professionals were not practicing tele-health during COVID-19 and at the time of study interviews compared to 50% prior to the pandemic and there is a steady and measured adoption of third party platforms for scheduling appointments, consultations, fee management, prescription and diagnostics referrals. The Telemedicine Practice guidelines released by the Indian government in the midst of pandemicemerged as the major catalyst for exponential uptake of telehealth medium because important issues such as medical ethics, professional norms for protecting patient privacy and data confidentiality etc. were addressed.[7] In this study, 61.2% participants were aware of the guidelines, and 47.8% were maintaining digital logs of the telehealth consultations, 70% obtained informed consent(Explicit-19.1%, implicit-29.8%, a combination of both-51.1%) from the clients during consultations. Obtaining informed consent in writing from the patient for the use of patients' data remains a major requirement of Data Protection Rules.[27,28] In a study conducted across 14 hospital in Delhi, Meher et. al. recommended training for doctors and awareness programs for clients for improving the utilization of telehealth services.[29]

Mediums Used and Their Impact: The internet subscribers in India are 700 million and ever increasing and predicted to reach 974 million by 2024.[30] In this study, WhatsApp emerged as the most widely used smartphone application allowing telehealth consultations with combination of text/voice, still pictures and video recordings in concurrence with global studies.[31,32]We observed that the tele-consultation services were offered through WhatsApp (video, audio calls and text messages) and phone calls and text messages, Google Meet, Zoom calls, other commercial mobile applications. The advantages of tele-health consultations during pandemic are reflective of global insights including shortening of travelling distances, long waiting hours, overcrowding in outpatient departments, requirement of COVID-19PCR testing repeatedly and investing in personal protective equipment, which has become the standard protocol for hospital visits.[33-37] Although, many benefits exist in this method of delivering healthcare, doctors still prefer direct consultations as it ensures precise diagnosis and treatment complemented with physical examination and guarantees doctor-patient satisfaction.[38] Perceived satisfactory experiences was reported by 25-30% of the participants which is similar to the global trend that practitioners remain optimistic about the evolution of tele-health practices.[39]

Facilitators, satisfaction gradient and barriers for tele-health practice: Among the individual level barriers, it has been emphasized repeatedly that the confidence and accurate diagnosis devoid of detailed physical examination will remain a definite bane to this medium along with tele-communication barriers in form of poor network, less accessibility to internet / smartphones and personal computers, unclear / blurred images, call lags, and patient's illiteracy. Concurrently, it was evident from our interviews that a minority of health practitioners identify tele-medicine as an additional liability and feel overburdened during this pandemic wave. Despite being the safest method in not-

visiting hospital amidst the pandemic (no exposure),[40] challenges such as securing patient data privacy, timing the appointments, disparities in consultation reimbursement structures[41]and maximizing the comfort level between the care providers and patient (as established in direct consultations) pose a threat to wider uptake of tele-health in the future.

Aptitude towards telehealth smartphone-based apps: While majority of our doctors use WhatsApp services to review patients' clinical appointments and prescribe medicines, they had also (at some point of time) used mobile phone apps like 'Practo' (app). In this early phase of the pandemic, physicians perceived that they were ill-equipped or not digitally well-oriented to adapt to tele-health consultations as they were doing clinic based practice for many decades. Many believe that digital consultation applications have weak confidentiality policies that fails to protect and secure patients' data, which was the most recurring statement in several interviews. Some doctors refrain from such smartphone applications for their non-user-friendly features. Interestingly, they also claimed to induce unhealthy competition among doctors who enroll in third party apps. There is a mixed-reaction among the participants about their ability to set-up formal tele-health practice during pandemic and were more inclined to approach it as stop-gap substitute to tide over this period. These barriers were highlighted in systematic reviews of tele-medicine studies and government of India is addressing these gaps in the Blueprint of National Digital Health Policy and eSanjeevani services which rose to exponential leaps during COVID catering to non-COVID patient care.[42-44]

Despite the slow adoption of digital platforms and multiple challenges, tele-health is regarded as having a potential to stay in the future as permanent care practice by the study participants. The Ipsos COVID Impact Study revealed that 75% physicians

were interested to continue virtual consultation in post pandemic period.[45] In a joint study by SMRC and Purdue University, it was noted that 50% younger doctors (against 40%) adopted telehealth during pandemic which is reflected in our interviews by senior professionals as 'generation gap" and also that 58% female doctors opted for online consultations compared to 44% by males.[46]

Specialty-specific challenges in Tele-health practice: Multiple practitioners across diverse settings listed out the challenges pertaining to tele-health practice applicable in their specialty context. In a study conducted among pediatricians, it is reported that tele-medicine is convenient for visits for minor illnesses, new-born screening, vaccination scheduling but its limitation in laboratory services and screening for hearing and vision complaints remain unmet.[17,47] This is synonymous with the results obtained from pediatricians from our study. It was brought into our attention during interview with psychiatrists that virtual visits did not spare the patients' privacy, rendering the patients discomfit and concealing certain essential symptoms and complaints required for diagnosing and managing the patient. Tele-psychiatry services are emerging fast as much needed tele-health services post-pandemic and there is emphasis for training of specialists for effective delivery of downstream patient care components.[48-50]Specialties like dentistry offer a lot of surgical interventions as complete treatment which strictly demands direct consultations despite which high patient satisfaction was reported during pandemic for tele-dentistry services.[51]

Conclusions

'Necessity gives rise to innovation.' The global lockdown, social isolation and self-quarantine practices greatly disadvantaged the communities in terms of seeking medical care. Some perceive this booming trend as a forceful impact of the pandemic

while many of our respondents also believe that tele-health is here to stay in future but it undertakes a supplementary role rather than completely replacing in-person consultations. Since the study was undertaken during the de-escalating phase of wave 1of the COVID-19pandemic, its endurance after the pandemic is still uncertain. While the global pandemic facilitated its smooth transition, the sustainability in the near future relies heavily on training the doctors, nurses, paramedics and bridging the gaps, and addressing the infrastructural limitations in distilling health care services through digital forums.

Limitations

Major limitation of our study is its generalizability as it was conducted during the emerging phase of the telehealth practices in the early stages of the COVID. Further follow-up studies as nextsteps will provide in-depth understanding about the emerging trends in tele-health practices across multiple settings. The study explored perspectives from care providers and could be complemented by understanding the clients' satisfaction with tele-health services too.

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Author contributions: STS Conceptualized the research proposal, designed survey questionnaire and interview guide, co-ordinated quantitative data collection, conducted interviews, manuscript writing. CC, finalizing the data collection tools, conducted phased data analysis and contributed to the Results Section in the manuscript. All authors reviewed the final manuscript.

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