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A CROSS-SECTIONAL STUDY TO ASSESS THE BARRIERS TO TELECONSULTATIONS AMONG DOCTORS IN CHENNAI

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ABSTRACT
Background: A doctor's communication and interpersonal skills encompass gathering information to facilitate accurate diagnosis, counsel appropriately, give therapeutic instructions, and establish caring relationships with patients. While face-to-face consultations have been the norm, tele-consultations and enrolment in telemedicine apps have become necessary. Tele-consultations have been on the rise significantly during the COVID-19 lockdown. This study aims to assess the barriers to tele-consultations among doctors in Chennai. **Methodology:** This study uses a cross-sectional design to assess the barriers to tele-consultations among doctors in Chennai using a convenience sampling technique. Data was entered in Microsoft Excel and analyzed using SPSS software version 23. **Results:** 81.6% of the participants feel that teleconsultations have reduced face-to-face consultations. Only about 6% of the study participants preferred teleconsultation in the future. About a third of the doctors in the study could not treat/manage chronically ill patients through teleconsultations. About 70% of the doctors could follow up with their patients through telecommunication, but 70% failed to follow up. **Conclusion:** From this study, we conclude that only about 6% of the study participants would prefer teleconsultation in the future. Treating medical emergencies and assessment of surgical patients were considered as top 2 important barriers in this study with about half of them facing this barrier during their telecommunication.

INTRODUCTION

The doctor–patient relationship has been and remains a keystone of care: the medium in which data are gathered, diagnoses and plans are made, compliance is accomplished, and healing, patient activation, and support are provided [1]. A doctor's communication and interpersonal skills encompass gathering

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information to facilitate accurate diagnosis, counsel appropriately, give therapeutic instructions, and establish caring relationships with patients. These are the core clinical skills in medicine, with the ultimate goal of achieving the best outcome and patient satisfaction, which are essential for the effective delivery of health care [1]. While face-to-face consultations have been the norm, tele-consultations and enrolment in tele-medicine apps have become necessary [2]. Tele-consultations have been on the rise, especially during the COVID-19 lockdown. This study aims to assess the barriers to tele-consultations among doctors in Chennai. However, doctors face specific barriers like caring for chronically ill, managing mental illness, dealing with emergencies, explaining diagnosis and treatment to patients, managing surgical patients, time constraints, technological issues, decision making without examining the patient physically, misprinting of drugs while prescribing, and miscommunications. There is a dearth of literature regarding barriers to teleconsultations among doctors in Chennai [3] and India, which we will assess in this study. This study aims to assess the barriers to tele-consultations among doctors in Chennai. This study's objective is to assess the various barriers faced during tele-consultations by doctors and determine the topmost barriers faced like caring for the chronically ill, managing mental illness, dealing with emergencies, explaining diagnosis and treatment to patients, managing surgical patients, time constraints, technological issues, decision making without examining the patient physically, misprinting of drugs while prescribing, miscommunications and offering specific practical solutions to resolve these issues.

METHODOLOGY

STUDY DESIGN, STUDY AREA, AND POPULATION

By convenience sampling, this web-based cross-sectional study was carried out among doctors in a private medical college in Chennai, Tamil Nadu, India. Since there is no relevant literature, we assume the prevalence to be 50%, the sample size calculated is at 95% confidence interval, and the allowable error is 5% using the formula,

$$N = \frac{Z^2{}_{1-\alpha/2} PQ}{L^2}$$

Where N is the sample size, Z represents Z value at a 95% confidence interval, which is 1.96, P is prevalence, which is 50, Q is 100 minus P, which is 50, L is allowable error, which is set as 5% and N= 1.96x1.96x50x50/25= 384. Accounting for 15% non-response, **the final sample size is 452.**

Inclusion and Exclusion Criteria

All doctors currently involved in clinical practice and doctors who were and are doing tele-consultations were included in the study. Doctors who do not perform tele-consultations were excluded from the study.

Ethical Clearance

The study was conducted after obtaining approval from the Institutional Ethical Committee in a private medical college in Chennai with the reference number 002/SBMC/IHEC/2021/1633.

Data Collection

The present study is a quantitative approach using a cross-sectional design to assess the barriers to tele-consultations among doctors in Chennai. Data was collected through an online platform due to pandemic situations to avoid the spread of infection. An online structured questionnaire was distributed using Google Forms, with a consent form attached. Questionnaire consisted of four sections-Section 1 was consent, section 2 were the eligibility criteria, section 3 were the participant details and final section consisted of questions to assess barriers to tele-consultations. To contact the participants, a questionnaire link was sent through WhatsApp, Facebook, email, Instagram, and other media. Upon receiving and clicking the link, the participants were auto-directed to the study's information and informed consent. After accepting to participate in the web-based survey, participants had to fill out the participant details followed by questions regarding barriers to teleconsultations.

Statistical Analysis

Data was entered in MS Excel and analyzed using SPSS software version 23.

RESULTS

The mean age of the participants was 31.21±5.86 years (range: 23 to 65 years). 211 doctors used teleconsultation apps teleconsultation, whereas 53 doctors used the hospital website, and the rest of them used their contact number for teleconsultation (Table 1) This is probably because the doctors felt that the patients could reach the doctors more quickly through their contact numbers than through hospital websites or other apps, thereby removing any difficulty with technical issues that some patients might face.

Table 1: Descriptive data of study participants (N=452)

Demographic details	Frequency	%
Gender		
Male	234	51.8
Female	218	48.2
Educational Qualification		
MBBS	95	21.0
MD/MS	297	65.7
Diploma/Fellowship	9	2.0
Super speciality	51	11.3
Working at		
Government medical college/ hospital	69	15.3
Private medical college/hospital	240	53.1
Clinic	143	31.6

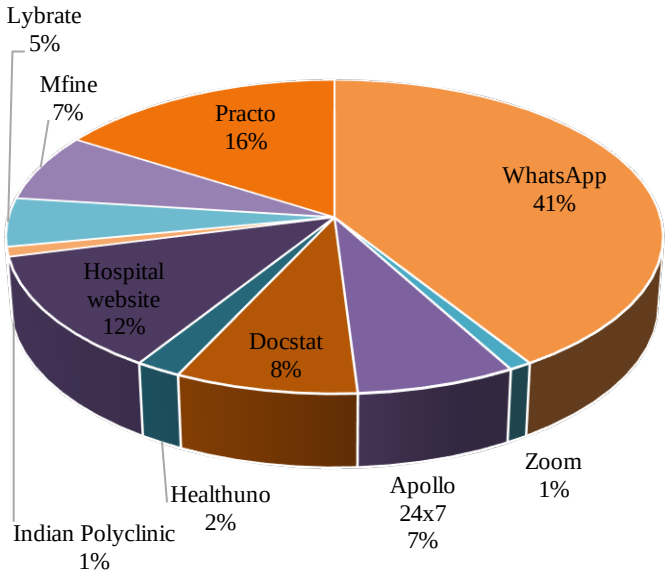

Figure 1: Pie chart showing the different apps used for teleconsultation by the study participants (N=452)

WhatsApp 41% was the app most commonly used app for teleconsultations (Fig 1), followed by Practo at 16%, Hospital website 12%, Docstat 8% and Apollo 24 7 at 7%. The doctors preferred video consultations for their patients as it was the only method that offered some benefits of an in-person consultation. Since the doctors more often used WhatsApp daily it would have been preferred as it had facilities for typing out e-prescriptions and audio and video calls could also be performed with ease.

81.6% of the participants feel that teleconsultations have reduced face-to-face consultations. 28.8% of the study participants performed an average of 5-10 teleconsultations per day (Table 2), while half the study participants performed less than 5 calls daily.

Table 2: Descriptive analysis of the teleconsultation apps usage among the study participants(N=452)

	Frequency	Percentage
1. Do you feel that tele-consultations have reduced the number of face-to-face consultations?		
Yes	369	81.6
No	83	18.4
2. On an average how many hours a day do you spend for tele-consultations?		
<5 hours	279	61.7
>10 hours	57	12.6
5-10 hours	116	25.7
3. What is the average number of tele-consultations you do per day?		
<5	244	54.0
>10	78	17.3
5-10	130	28.8
4.On an average how much time do you spend per tele-consultation?		
<10 mins	199	44.0
>20 mins	80	17.7
10-20 mins	173	38.3

Table 3: Descriptive analysis of the barriers to teleconsultation

	Frequency	Percentage
1. Is that period adequate to diagnose/treat a patient?		
Yes	378	83.6
No	74	16.4
2. Are you able to diagnose the patients through tele-consultations?		
Yes	351	77.7
No	101	22.3
3. Can you treat/manage chronically ill patients through tele-consultations?		
Yes	287	63.5
No	165	36.5
4. Are you able to treat/manage patients with mental illness through tele-consultations?		
Yes	173	38.3
No	204	45.1
Not Applicable	75	16.6
5. Are you able to assess surgical patients through tele-consultations?		
Yes	134	29.6
No	231	51.1
Not Applicable	87	19.2

6. Are you able to deal with medical emergencies through tele-consultations?		
Yes	221	48.9
No	231	51.1
7. Are you able to explain the disease diagnosis to patients through tele-consultations?		
Yes	309	68.4
No	143	31.6
8. Can you explain the treatment to the patients through tele-consultations?		
Yes	316	69.9
No	136	30.1
9. Do you have good network connectivity during these calls?		
Yes	323	71.5
No	129	28.5
10. Can you communicate well with the patient in your local language?		
Yes	395	87.4
No	57	12.6
11. Have the patients misinterpreted your words during teleconsultations?		
Yes	359	79.4
No	93	20.6
12. Have you faced any difficulties in typing drug prescriptions during tele-consultations?		
Yes	371	82.1
No	81	17.9
13. Are you able to follow up with your patients through tele-consultations?		
Yes	318	70.4
No	134	29.6
14. Have you lost patients due to loss of follow-up through teleconsultations?		
Yes	320	70.8
No	132	29.2

Only about 6% of the study participants preferred teleconsultations in the future. Treating medical emergencies and assessing surgical patients were considered the top 2 essential barriers in this study, with about half facing this barrier during their telecommunication. Specific surgical lesions were relatively difficult to assess through tele-consultations. Medical emergencies such as a myocardial infarction require the presence or availability of doctors from multiple specialties to handle the situation promptly. Since the consulting doctor could not coordinate with other doctors, timely management could not be administered. Slightly less than half of the participants were not able to treat/manage patients with mental illness during telecommunication. About 1/3rd of the doctors in the study could not treat/manage chronically ill patients through telecommunication (Table 3). About 70% of the doctors had lost patients due to loss of follow-up. Doctors described the possible reasons as patients being dissatisfied with the time spent or advice offered by them, insufficient rapport or familiarity with the doctor and the treatment, some patients complaining of difficulties in comprehending the doctor, the diagnosis and treatment were not clear enough, and many of the aged patients faced technical difficulties and only preferred the direct consultations even though it was expensive and time-consuming. Preference of traditional consultations by the patients led to loss of follow up through tele-consultations.

DISCUSSION

A study titled **"**Virtual online consultations: advantages and limitations (VOCAL) study," by Greengalh et al. found that Teleconsultations offer potential advantages to patients (who are spared the cost and inconvenience of travel) and the healthcare system (e.g., they may be more cost-effective), which is in discordance with our study, where only about 6% of the participant doctors preferred teleconsultations in the future [4]. Patients preferred teleconsultations due to ease of access, cost-effectiveness, and time-saving nature, as found in a study by Kołtowski et al titled "Cardiological teleconsultation in the coronavirus disease 2019 era: patient's and physician's perspective" Doctors in our study did not prefer teleconsultations due to the barriers faced as discussed previously, such as network issues, language barriers, difficulty in managing surgical patients, chronically ill patients, etc without dealing with it directly. In a study titled, "The effectiveness of teleconsultations in primary care: a systematic review" by Albornoz et al, it was noted that there were high discontinuation rates in patients receiving teleconsultations indicate this may not be a suitable modality of healthcare delivery for all patients. Teleconsultations offer significant patient time savings in primary care. However, appropriate implementation, including training healthcare professionals and managing technical issues, is essential to ensure effective and valuable clinical intervention [5]. This finding concord with our study where about 70% of the doctors could follow up their

patients through telecommunication but 70% of the patients were lost to follow up. According to a study titled "Telemedicine for healthcare," by Haleen et al, Telemedicine technologies allow patients and doctors to review the treatment process. However, this technology supplements physical consultation and is no substitute for a physical consultation. Today, this technology is a safe choice for patients who cannot go to the doctor or sit at home, especially during a pandemic [6]. In another study by Mahendradas et al, use of tele-consultations were studied during COVID-19 pandemic. They found that based on their preliminary experience using a customized smartphone-based application for teleconsultation; it was an alternative option to continue ophthalmic care to uveitis patients. Given the COVID-19 situation, it can help avoid physical visits of uveitis patients to the hospital [7]. Our study found that treating medical emergencies and assessing surgical patients could not be done with about half of the doctors facing this barrier during their telecommunication. Slightly less than half of the participants were not able to treat/manage patients with mental illness during telecommunication, which would have been a major drawback during the pandemic. Despite the various perks of tele-consultations like being time-saving, cost effective and easy access to remote areas, doctors in this study are hesitant to use tele-consultations due to the barriers described.

LIMITATIONS

This study was only done from the doctor's telecommunication perspective; it could have also involved the patient's perception. The data collection from doctors was done through Google forms sent by email and WhatsApp, including doctors working in hospitals/clinics. It could have included doctors who had practiced medicine previously/or retired doctors as well to gather their perspectives regarding teleconsultations. The sample collection was from one private medical college in Chennai; it could have included other institutions to make the results more generalizable. The study did not consider the technological literacy among the study participants.

CONCLUSION AND RECOMMENDATIONS

From this study we can make the following conclusions: 211 doctors used teleconsultation apps for teleconsultation whereas 53 doctors used hospital website and the rest used their contact number for teleconsultation (Table 1). At 41% WhatsApp was the most commonly used for teleconsultation (Figure 1). 81.6% of the participants feel that teleconsultations have reduced face-to-face consultations. 28.8% of the study participants performed an average of 5-10 teleconsultations daily, while half performed less than 5 daily calls (Table 2). Only about 6% of the study participants preferred teleconsultation in the future. Treating medical emergencies and assessing surgical patients were considered the top 2 significant barriers in this study, with about half facing this barrier during their telecommunication. Slightly less than half of the participants were not able to treat/manage patients with mental illness during telecommunication. About $1/3^{rd}$ of the doctors in the study could not treat/manage chronically ill patients through telecommunication (Table 3). About 70% of the doctors could follow up their patients through telecommunication but 70% of the patients were lost to follow up. As a thumb rule, prescribing medicines for chronic diseases (such as asthma, diabetes or hypertension) should be avoided during teleconsultation, unless it is an add-on or refill of an earlier prescription obtained during an in-person consultation less than six months ago. If a prescription for chronic diseases is to be issued, then the teleconsultation should be done strictly via video [8]. These guidelines are in place to monitor the patient's progress before issuing them the prescriptions. A prescription can be sent through any electronic medium such as email, WhatsApp etc. as a photo/scan / digital copy of a signed prescription or an e-prescription [8]. Some practical suggestions based on the study's findings are

- Doctors must establish a good rapport with patients and their attenders
- They must practice good communication skills in daily clinical practice, treating a teleconsultation like a direct physical consultation
- Effective time management & solving network issues before each call must be ensured.
- Good communication skills in the local language is essential to perform a tele-consultation.

Teleconsultations have become an essential part of healthcare and are sometimes the only communication source between doctors and patients. While face-to-face consultations have always been the norm and is the most preferred way of consultation for doctors in this study, teleconsultations are proving to be time saving and cost effective in today's busy world. The purpose of this study was to bring to notice the issues faced by the doctors while performing teleconsultations so that they can be addressed by concerned authorities promptly for effective delivery of healthcare. The general public also gains from tele-consultations because they are time saving and cost

effective. People in remote, hard-to-reach areas can also have access to a doctor through tele-consultations when there is a problem with transportation in rugged terrain and distance.

FINANCIAL ASSISTANCE
Nil

CONFLICT OF INTEREST
The authors declare no conflict of interest

AUTHOR CONTRIBUTION
Supraja Nagarathinam, designed the entire study. R.Umadevi, Angeline Grace and Raghul Saravanan made significant changes and edited the study. All the authors checked the final draft.

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