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TELEPSYCHIATRY: INDIAN PERSPECTIVE

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SUPPLEMENT ISSUE: **TELEPSYCHIATRY: INDIAN PERSPECTIVE**

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PSYCHOLOGICAL MEDICINE

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Telemedicine Practice Guidelines and Telepsychiatry Operational Guidelines, India—A Commentary

Damodharan Dinakaran[1], Chethan Basavarajappa[1], Narayana Manjunatha[1], Channaveerachari Naveen Kumar[1], and Suresh Bada Math[1]

ABSTRACT

Recent advancements in technology, access to smartphone, and gains achieved in increased internet speed and data transfer have expanded the scope of health care service delivery through the digital platforms. In India, telemedicine services remain poorly adopted and integrated due to various barriers. The important reasons are lack of legal and administrative clarity in using technology for service delivery and inertia from health service providers to adopt newer developments. However, during coronavirus disease (COVID-19) pandemic, these equations are changing. The *Telemedicine practice guidelines* released in March, 2020, and *Telepsychiatry operational guidelines* released in May, 2020, appear to remove these barriers and promote equitable access to health care. In this article, the authors discuss the scope of these guidelines.

Keywords: Telemedicine, telepsychiatry, guidelines, health care, legal

Telemedicine encompasses the delivery of health care services using information and communication technologies.[1] This involves collecting information from the person, making a diagnosis, and managing the illness in virtual mode.[2] Mental health service delivery in India is hampered primarily by inadequate human resources and inequitable distribution of available resources. As capacity building is time-consuming, telepsychiatry could be used to address the poor accessibility issue efficiently.[3] The call to utilize technology so as to increase the reach of medical services has been there since a long time; however, many barriers prevented its uptake—some of these barriers were skepticism from clinicians, inadequate data on cost-effectiveness, and administrative and legal concerns.[3,4] Recently, the Medical Council of India released the *Telemedicine practice guidelines*.[1] The Indian Psychiatric Society (IPS) and Telemedicine Society of India (TSI) in collaboration with the National Institute of Mental Health and Neurosciences (NIMHANS) released *Telepsychiatry operational guidelines* in May 2020.[5] These recent guidelines help to remove the administrative and legal concerns present in practicing telemedicine. Also, available data suggests telepsychiatry is more economical than the existing standard in-person clinical care,[6] and it is acceptable and feasible.[7]

In this context, the telemedicine initiative from the government is much appreciated by all the stakeholders. During the lockdown phase of the pandemic, most services deemed to be nonessential were closed and it was a huge challenge even to get access to routine health care services. The timely release of the guidelines helped to dispel the administrative and legal concerns among clinicians, and they have been able to embrace telemedicine like never before. Recent reports show that telepsychiatric services are gaining popularity and getting implemented in many countries.[8,9] National Mental Health Survey of India (NMHS 2016) reported a huge treatment gap ranging from 75% to 93%.[10] Mental Healthcare Act (MHCA 2017) mandated the government to ensure every citizen has access to the mental health services. In India, with the public expenditure on health only around 1% of the gross domestic product (GDP), telemedicine could be a potential option to implement provisions of the MHCA.[11,12] In this overview, the authors, discuss the scope of the *Telemedicine practice guidelines*, March 2020 and *Telepsychiatry operational guidelines*, May 2020.

Telemedicine Practice Guidelines

Board of Governors in supersession of the Medical Council of India released the *Telemedicine practice guidelines* for registered medical practitioners (RMPs) on March 25, 2020.[1] The guidelines enable the RMPs to deliver health care using technology. The purpose of the guidelines is to offer clear, practical advice to the RMPs about using technological advancements in medical practice. The guideline is an important first step in organizing the telehealth services across the nation. Scope, definitions, norms, protocols, and framework to implement telemedicine services are outlined in this guide. The roles and responsibilities of patients, RMPs, health workers, and telehealth platforms while administering telemedicine services are clearly delineated.

The guidelines enable RMPs to utilize audio, video, text, apps, email, social media, fax, or any other available communication platform to interact with other RMPS, health workers, patients, and their caregivers. This reduces the ambiguity and entitles RMPs to explore the innovative digital options to reach the stakeholders. For service users, telemedicine provides better access to care, minimize travel-related expenditure, and safety from contagious diseases. The guidelines allow both initial and fol-

low up consultations through telemedicine services. Both synchronous and asynchronous communication modes could be utilized to deliver service. The guidelines describe the strengths and limitations of different modes of communication. The professional discretion of judgment to use the available means rests with the RMP. Additionally, practitioners are instructed not to compromise on the quality of care. RMPs are expected to uphold similar ethical norms and professional standards as applicable to the routine in-person clinical care.

RMPs are mandated to verify and confirm the identity and age of the patient before proceeding with the teleconsultation. Types of consent and means of availing the consent for online consultation are described. First and follow-up consultations are categorized clearly. Guidelines for consultation between two RMPs, between RMP and health workers, and between RMP and caregiver are provided. Drugs are categorized into different lists (List O, A, B, and prohibited) for a specific type of consultation. Steps to handle emergencies in teleconsultations are specified. RMPs are directed to mandatorily refer the patient for immediate in-person consultations if clinical emergency is identified. There is a separate section providing guidelines/directions for the software aggregators and telehealth platforms. The guidelines exclude the provisions for remotely assisted surgeries, research, and education of health care workers. Also, the guideline does not provide for the consultation outside the jurisdiction of India through telemedicine. A standard format for issuing a prescription is provided.

This guideline reduces ambiguity in health care delivery but has certain important limitations. When a grievance arises out of an inter-state telemedicine consultation, the legal jurisdiction of the trial is unclear. For example, RMP registered with a particular state medical council could treat patients across all the states in the country. When grievances arise out of such consultations, the patient/caregiver might face hardships in approaching the legal system since the jurisdiction is not clarified. Provision and management of health care is specific to each state, and the local regulations might hinder the effective translation of telemedicine guidelines services. The poor network connectivity in many regions of the country might restrict effective communication. Video-based consultation is stipulated essential to prescribe certain listed drugs, and this may not be feasible at all times. For example, benzodiazepines are frequently used class of drugs for various indications in psychiatry.[13] This guideline restricts prescribing benzodiazepines further, which may be a cause of concern. RMPs are likely to face practical challenges in maintaining the digital trail of records, privacy, and confidentiality secondary to difficulties in the transition from manual to digital records and the possibility of data leak from the software aggregators. When the role of technology platforms (e.g., WhatsApp, zoom, and Skype) is unclear, managing the privacy and confidentiality of the communication becomes problematic. Enabling education and research using technology would be the ideal next step. Though this initial attempt by the governing body has certain limitations, it is indeed the essential step in regulating the telemedicine services. This initiative has received widespread appreciation from the service providers as a friendly and effective strategy to provide equitable access to health care.

Telepsychiatry Operational Guidelines

In May 2020, IPS and TSI in collaboration with NIMHANS, Bengaluru, published the *Telepsychiatry operational guidelines—2020*.[5] This is a telepsychiatry resource guide intended for psychiatrists practicing in India. The guidelines focus primarily on the video-based telepsychiatry services, unlike the telemedicine guidelines that included audio and text-based consultations as well. The guidelines aim to empower psychiatrists across the nation to initiate and implement telepsychiatric services. The guide emphasizes that the psychiatrist should be observant of the provisions of laws (MHCA 2017, especially) pertinent to the practice of medicine and mental health. Psychiatrists should also uphold professional clinical standards while practicing telepsychiatry, similar to the traditional in-person psychiatry practice.

The guidelines outline the medico-legal issues that may arise during the online consultation and lay specific suggestions to avoid such concerns. The guidelines reiterate that the professional should avoid advertisements about the practice in social media and online platforms. A framework for setting up telepsychiatry services with hardware and software technology standards is outlined. The guide advises choosing telemedicine software, which is simple, user friendly, and effective. Clear suggestions are provided to maintain the basic medical record in either physical or virtual form. In accordance with the existing laws, a structured format is provided that would help to maintain patient health records for first and subsequent visits. The need to obtain explicit consent from the patient before recording the consultation is emphasized. Importantly, the step-by-step operational procedure to be followed before, during, and after telepsychiatry consultation is elaborated in detail. The guidelines also provide a specific format for caregiver-initiated consultations. The caregiver initiating a psychiatric consultation is common in our country.[14] This provision in the guidelines would avoid unnecessary professional and legal dilemmas while rendering the needed service and streamlines the provisions of the *Telemedicine practice guidelines*.

The guidelines specify the clinical scenarios where the telepsychiatry consultation needs to be stopped, and the concerned person is to be referred for in-person assessment and management. The role of a psychiatrist during the collaborative telepsychiatric consultation between a psychiatrist and a health worker is explained. The importance of availing adequate information and arriving at a provisional diagnosis before prescribing psychotropic medications is reiterated. The guidelines classify the available psychotropic medications into groups/List O, A, B, and C in accordance with the *Telemedicine practice guidelines*. This simplifies and enables the psychiatrist to choose a specific drug for the denoted purpose. Telepsychotherapy is also encouraged after initial in-person detailed assessment. A set of guiding principles are provided for practicing telepsychotherapy. Appendices to the guidelines contain pro formas for a

new consultation, follow-up visit, necessary consent forms, therapy report form, a formal authorization letter from the patient for caregiver-initiated consultations, and standard prescription format.

Future Directions

Innovative application of available technology in mental health service delivery might reduce the huge treatment gap. Several mental health regulatory authorities could be brought online for addressing the grievances quickly and effectively. Such innovations might bring in transparency and accountability. The inclusion of research and training in the guidelines would provide the necessary scope to evaluate the telepsychiatry practice. Perspectives from the service provider and the user may be assessed for better implementation of the guidelines. Research in virtual physical examination, which is currently not in the provisions of the guidelines, may instruct and educate the practitioners for future adaptation. Recent developments in wearable devices that monitor heart rate and rhythm, activity levels, and sleep quality, and adherence-monitoring applications might be integrated for better clinical practice. Telepsychiatry services could be used to monitor, mentor, and supervise the implementation of national and district mental health programs.

Conclusion

The release of the telemedicine and telepsychiatry guidelines has come as a timely measure during this COVID pandemic as it will help to reach the unreached during the restrictions. These are not to be seen as an alternative to lack of human resources but an essential first step in ensuring the equitable distribution of available resources. These guidelines might provide impetus in taking health service delivery to service user's doorstep. Especially when nonessential out-patient services are stopped and transport facilities are curtailed, the guidelines mainly help to mitigate the uncertainties in the legislation and make the process simpler. These guidelines pave the way for providing a safe, user-friendly, and cost-effective framework to improve health care service delivery. Psychiatrists are enabled to consult patients across the country, promoting fast and equitable access to all parts of the country. The guidelines offer legal protection to all the stakeholders and a higher likelihood of maintaining patient records. Successful translation of the guidelines' vision to clinical practice is the essential way forward.

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Setting Up and Providing Telepsychiatry Services in India

Furkhan Ali[1], Vachana Kamila[2], Mahesh R Gowda[2], Preeti Srinivasa[2], Guru S Gowda[1], Suresh Bada Math[1]

ABSTRACT

The exponential growth of technology in the past few decades has benefitted the healthcare sector. Telemedicine is a newer advancement which is making healthcare affordable and more accessible to the needy in recent times. This article discusses how to set up telepsychiatry services, the procedure of telepsychiatry consultation, how to record and maintain the electronic health records, the potential challenges, ethical and legal aspects concerning telepsychiatry while ensuring the good practice guidelines, medical ethics, patient rights, and the minimum requirements as established by the Information Technology Act and the telemedicine practice guidelines (TPG) 2020 issued by the Indian Medical Council.

Keywords: Telepsychiatry, telepsychiatry setup, telemedicine, India

In the past few decades, there has been a revolution in the information and technology (IT) sector, especially in many developed countries, including in India. That made affordable smartphones and faster, low-cost mobile internet, there has been wider penetration of mobile and internet accessibility. According to the Department of Telecommunications, Ministry of Communications, Government of India, there are more than 636 million internet users. The teledensity (telephone users per 100 inhabitants) has increased from 3.5% in 2001 to 90% in 2019.[1] This has led to the tremendous growth of e-commerce, online education, and internet-based businesses.

Further advancement and the ease of use of technology has increased its usability and acceptance among larger populations.[2] All these have resulted in the amalgamation of the IT sector and healthcare, giving rise to telemedicine. Telemedicine in the current scenario has played a pivotal role in catering to physical and mental well-being and has reached the majority of our population. The World Health Organization (WHO) describes telemedicine as, "The delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for the diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities."[3]

In India, tremendous contributions from the Department of Information Technology (DIT), Indian Space Research Organization, North Eastern Council (NEC) Telemedicine Program for the North-Eastern States, Karnataka State Wide Area Network (KSWAN) have led to delivery and advancement of telemedicine health care delivery services. On Mar 25, 2020, Telemedicine Practice Guidelines (TPG, 2020)[4] got legal approval and came into existence to facilitate the use of telemedicine by general practitioners. The National Institute of Mental Health and Neurosciences (NIMHANS) has also issued guidelines for tele-psychotherapy, telepsychiatry social work practice, in addition to telepsychiatry.[5–7] Telemedicine is a convenient alternative and perhaps even ideal in scenarios where there is a difficulty for users to avail of quality healthcare owing to various constraints such as economic, transportation, social, or in places with no healthcare facilities. Also, India has a problem of wide treatment gap for mental illness, ranging between 70% and 92%, as per the estimates of National Mental Health Survey (NMHS) conducted in 2015–2016,[8] and telepsychiatry could help bridge this gap. This article attempts to discuss the process of setting up, levels of telemedicine facility, and managing telemedicine services with a focus on telepsychiatry, the challenges associated with it, and possible solutions.

How to Set Up and Run a Telepsychiatry Service

An effective teleconsultation requires the good functioning of its constituents. Ideally, these need to be user friendly and should not cause additional financial burden either to the service user or the provider and meet the standard safety, privacy, and confidentiality of data storage and encryption as per the IT Act 2000 and TPG 2020. It is, therefore, vital that the infrastructure already available on both ends be optimized and used for the teleservices to be successful in the long run.

The key components that form the basis of teleconsultation unit are described in the following sections.

Human Resources

Any successful telemedicine services would require adequately trained people who are well versed in the system. Broadly, they can be divided into the following two categories.

1. **Specialists:** They can further be categorized into medical specialists and IT specialists. Medical specialists are doctors, nursing staff, and pharmacists who deliver healthcare to the user. IT specialists are people who develop and manage the software, servers that host the data, and the security of the data and hardware necessary for the smooth functioning of the telepsychiatry services. The Telemedicine Society of India has started an online training module for the registered medical practitioners (RMPs) which aims at familiarizing

the doctors to telemedicine, with a focus on concepts like tele-triaging, legal aspects, and a "Do-It-Yourself" approach to setting up a telemedicine practice,[9] and this was planned in compliance with Telemedicine Compliance Guidelines.

2. **Non-specialists:** They are the people who replace the role of a traditional "front-desk receptionist." They are responsible for primarily handling managerial issues like identification of the patient by verifying their ID (Aadhaar card, driving license, voters ID, etc.), the schedule and fix the consultation, brief the users about the use of the software by giving a remote demonstration, or sending them pre-recorded video demos of the interface. They should explain to the clients the "dos" and "donts" of teleconsultation for the users. They need to take feedback of the teleconsultation and resolve any queries. They can send reminders about the next consultation, with the consent of the user, and also supervise online fee transactions through RTGS, NEFT or other online payment portals. Their role can expand to include the responsibility to maintain the electronic consultation records. They also need to be trained to explain to the user about the process of data collection, sharing of data with other service providers as part of referral care, storage of data in local or external servers, and the risks of breach of privacy.

Hardware Requirements

Gadgets like smartphone/personal computer/laptop computers are minimum requirements for an effective teleconsultation on individual RMP level practice. For catering to multi-specialist hospitals, there are teleconferencing solution providers that offer a comprehensive portfolio including video conferencing systems, infrastructure, designing, acoustic solutions, lighting solutions, state of the art audio and interior designing of the studio, and so on.

Physical Infrastructure

Well-lit rooms that have minimal noise should be sufficient for conducting a teleconsultation session. However, if feasible, sound-proofed places are preferred. The consultation room walls should preferably be painted with soft colors to prevent distracting the users.

Internet

A good internet connection is perhaps the most vital component of telemedicine. Service providers should invest in having good quality, high-speed broadband connections, and, if possible, have a separate link for teleconsultation. It is sensible to have a backup connection in place to avoid any connectivity-related issues during the consultation. In India, there are many internet service providers both from government and private sectors which offer good-quality, high-speed broadband internet services at affordable prices.

Power Backup

One of the major issues reported in telemedicine consultation is a loss of connectivity, usually because of electricity failures. An alternative power backup can be linked in the form of a UPS or generator to avoid this.

Mobile Number/Telephone for Telemedicine Services

It is preferable to have an exclusive mobile phone/landline connection and a number for managing consultation. Multipurpose front-desk or other hospital telephone lines are better avoided. These can also be used as a portal to manage appointments, exchange lab investigation reports, prescriptions, follow-up reminders, etc. via messaging mobile applications such as WhatsApp.

Email for Telemedicine Services

An official hospital/ institute email can be set up and be used for all other support services. These can also be used as a portal to manage appointments, exchange lab investigation reports, prescriptions, follow-up reminders, etc.

Software

The RMP/polyclinic/organization may choose an application that best suits their patients' and doctors' needs. An ideal application would be something that has a minimal cost, with good accessibility, and is secure and user friendly. However, any software application being used must adhere to the guidelines laid down by HIPAA.[10]

Electronic Medical Record

According to the "Integrated Care Electronic Health Record (EHR)," "an Electronic Medical Record (EMR) is a repository of information regarding the health of a subject of care in computer-processable form that can be stored and transmitted securely and is accessible by multiple authorized users."[8,9] Telemedicine EHR is a framework that ensures encoding, storing, and retrieval of the medical records that are maintained online. EMR is a select category of EHR that holds records specific to the scope of the medical domain. There are various types of EMR: Departmental EMR, Inter-Departmental EMR, Hospital EMR, and Inter-Hospital EMR. These can include video logs of the consultation, notes by the psychiatrist, personal details of the user, consent forms, etc. Psychiatrists may either choose a telemedicine platform that has an integrated EHR or choose a standalone telemedicine solution without EHR and can enter all the notes into the patient's physical file directly and have physical documents (similar to traditional in-person documentation). Telepsychiatry platforms can be used exclusively for giving appointment, video conferencing, and generating and transmitting prescriptions. EHRs should not be seen as the core of healthcare but rather as an augmentation to the telepsychiatry consultation. However, psychiatrists while maintaining EHR need to comply with the Mental Healthcare Act (MHCA), 2017, Sec[11] 25 which stresses on the need for preserving basic medical records in hard copy and the guidelines framed by the Ministry of Health & Family Welfare (MoHFW) which notified the "EHR Standards for India" in September 2013.[12]

In recent times, many governments and non-government entities have started to provide open EHR systems to the doctors. The Government of India also has a hospital management system with

EHR services, named "e-hospital" from the National Informatics Centre (NIC)[13] and e-manas,[14] a platform from National Health Mission, Government of Karnataka, provides the EHR, state-wide registry of mental health facilities and professionals. The MoHFW, Government of India, has developed "National Teleconsultation Service" named e-Sanjeevani, which is the first of its kind online OPD service offered by a national government to its citizens. Safe and structured video-based clinical consultations between a doctor in a hospital and a patient in the confines of his home are offered.[15] Various platforms, which are mostly offered by private enterprises like Practo Pro,[16] Ment Doc,[17] TeleArogya,[18] are available for psychiatrists; some of them are free for both service providers and the users, whereas others offer software solutions for a fee. These provide software solutions for video consultation, text-based consultation, e-prescription generation, and maintenance of health records. Mental health professionals need to be aware of the user data being collected by these platforms and understand the extent of control one has over the data. Although the platforms report that they are comply with the guidelines laid down by MHCA, 2017, IT Act and HIPAA, it is always prudent for a professional to verify the same, before associating with any of the platforms.

Levels of Telemedicine Facility

A telemedicine/telepsychiatry facility can be established in various settings based on several factors such as infrastructure, manpower, budget, and availability of essential resources. Based on these factors, a telemedicine service can be of different types.

Stand-Alone Clinic

This setting would be ideal for a practitioner who is a beginner or a standalone practitioner or OPD clinic. It requires minimal equipment and space in the form of a single room with a laptop or even a smartphone with a good camera and a good network connection will suffice. This will encourage the budding RMPs/psychiatrist to reach more people and establish a good patient base.

Multi-specialty Facility

It involves setting up a telemedicine setup having one or more consultants of different or same specialties. The requirements will be similar to that of a teleconsultation but in a slightly sophisticated manner. It comprises a consultation chamber specially designed for patient interaction along with a team trained with the basic technical knowledge required to facilitate a smooth hassle-free teleconsultation.

Institutional Facility

This involves setting up of a teleconsultation in a corporate hospital or a medical college. This involves a bigger set up involving many consultants having multiple consultation chambers and various trained technical staff to manage the procedure of the consultation and also to maintain the EMRs.

Place of Setup of Telemedicine Consultation Facility

Existing guidelines do not stipulate the site from where the telemedicine facility needs to locate. Hence it can even be set at the home of a practitioner if all the general requirements can be satisfied. The TPG guidelines do not insist on particulars of specifications for hardware or software, infrastructure building, and maintenance. The provider can decide whether it be a separate (dedicated) telemedicine facility or an integrated one that may be used for other purposes too. It also up to the service provider to decide on investing in a dedicated comprehensive software solution, EHR/EMR services, or use one of the freely available platforms; each will have its advantages and disadvantages.

The Procedure of Telepsychiatry Consultation

Before Consultation

Fix Up the Schedule with Patients and Specialists

The non-specialist assistants can manage the appointments, request for prior medical records via asynchronous modes of telepsychiatry.

Identification

Identifying the patient and verification of the patient's identity by checking their ID document (AADHAR/ driving license, voters identity card, etc.): The non-specialist assistants need to verify and establish the identity of the service user, and this is preferably done via video conference rather than over an audio call, to enhance the reliability. However, any failure in this step, the vicarious liability is cast upon the RMP as per TPG-2020.

Demonstration of Software to Service Users (Patients)

The user must be familiarized with the consultation platform and the software for a seamless consultation. This can either be done by sending pre-recorded demo videos or done just before the consultation by the support staff.

Disclosure of Data Privacy, Confidentiality, Storage, Record to the Client

According to the TPG, 2020, an RMP "should abide by the Indian Medical Council (Professional Conduct, Etiquette and Ethics) Regulations, 2002 and with the relevant provisions of the IT Act, Data protection and privacy laws or any applicable rules notified from time to time for protecting patient privacy and confidentiality."[4] However, it exonerates the RMP of any responsibility for "breach of confidentiality if there is reasonable evidence to believe that patient's privacy and confidentiality has been compromised by a technology breach or by a person other than RMP. The RMPs should ensure that a reasonable degree of care while hiring such a service."[4]

Explaining Dos and Don'ts During the Consultation

The assistant should brief the user about proper teleconsultation etiquette, for example, wearing decent professional attire, being in a well-lit room with minimum noise and interruptions from others, having good internet and power backup, and a capable camera on their gadgets (mobile phone/computer) to ensure a seamless consultation from the user's end. The assistants need to seek permission to record the consultation and brief the user about maintaining confidentiality.

Consultation/Counselling/Therapy

Consent

Consent is mandatory for any telemedicine consultation. The consent is implied when the user initiates a one to one consultation; in all other situations, explicit documented consent needs to be taken. Proper informed consent requires all necessary information,[19] and the patient and his family must be made to understand the limitations and procedures of the consultation, taking extra care to explain what data may be collected and how it will be stored and used. Consent can be recorded in any form, either audio, video conference, written form, which is in line with IMC TPG. All rules of regular consultation apply to telepsychiatry, and the psychiatrist must follow all good practice guidelines applicable otherwise.

Prescription

Same professional accountability entails for prescribing medications via telepsychiatry as in the traditional in-person consult. It is done based on the professional discretion of the treating psychiatrist. If a medical condition requires a particular protocol to be followed to diagnose and prescribe as in a case of the in-person consult, then the same prevailing principle will apply to a telepsychiatry consult. It is recommended that a detailed evaluation and collection of information must be done by the psychiatrist before prescribing medication.[4] If a psychiatrist believes that a physical examination is necessary, it would be a good practice to request the user to get a physical examination done either in-person consult with the same doctor or a nearby physician before prescribing medications online. Prescribing medications via telepsychiatry also depends upon certain criteria such as follows:

1. **Type of consultation (first/follow-up consult):** In situations where it is possible, it is preferable to have an in-person first consult, and later for follow-up, one can switch to teleconsultations. However, TPG-2020 and Operational Telepsychiatry Guidelines (OTG)-2020 do not prohibit tele-first consult.
2. **Mode of consultation (text/audio/video):** It is not ideal to prescribe medications in a text or audio consultation. Prescribing medications must be done, preferably, after a video consultation.
3. **Categories of the medications:** The telemedicine guidelines issued in March 2020[4] allowed for e-prescription of the drugs in Lists O, A, and B. List "C" drugs have been prohibited from prescribing via a teleconsultation. Also, the psychiatrist has to prescribe medications as per the Drugs and Cosmetics Act, 1940 (DC Act)
4. TPG mandates to prescribe medications with their generic names only and prescribe medications to patients rather than routing to pharmacies.
5. It is also advisable to prescribe medications to patients rather than routing to pharmacies. If routed to any specific pharmacy, the RMP needs to take explicit consent to do so.

Follow-Up Plan/Aftercare Plan

Aftercare plans/follow-up can be made during consultation and reminded with the users using one of the many asynchronous modes. Telepsychiatry perhaps makes following up a user more convenient and effective because of ease of accessibility, and the hope is that a mental health service user will continuously be in the care-loop, helping in less relapse and hospitalization.

After Consultation

Post-consultation formalities are usually handled by non-specialist assistants as discussed earlier and involve the following:

1. **Sending e-prescription**—e-Prescription can either by handwritten, scanned, or printed and digitally signed. These can be sent across via various asynchronous methods. In addition to the usual requirements of a good prescription, it is advisable to mention the mode of consultation, that is, video consultation, etc., and reason for the teleconsultation.
2. **Feedback about the consultation**—It is a good practice to collect feedback from the users on technology use, satisfaction, comfortability and so on. Analyzing and addressing the issues can improve user satisfaction and the quality of telepsychiatry services.
3. **Consultation fee**—The users need to be assisted regarding various online payment methods, an invoice has to be generated, and receipt has to be issued. It is important to ensure that the payment portals chosen are secure and reliable.
4. **Documentation**—The following documents are to be maintained: patient records, reports, documents, images, diagnostics, data, etc. (digital or non-digital) utilized in the telemedicine consultation should be retained by the RMP. Specifically, in cases where the prescription is issued with the patient, the RMP is required to maintain the prescription records, as required for in-person consultation.[4,11,20] The RMP is also expected to maintain records related to the consultation for a long period in the form of EMRs. They are generally done by a team that includes a trained technical staff who maintains the same.[4,19]
5. **Referral/other services and investigation/imaging**—Like in an in-person consultation, any referrals to other specialties, need for involvement of allied services, or the need for lab investigations and imaging can be handled through asynchronous modes of telepsychiatry seamlessly.

Maintaining Standards and Quality of Telepsychiatry Services

Regular monitoring can help to improve the quality of services provided. This is possible by obtaining feedback from both the person getting consulted and the consultant. Rating of consultation can be done, and the same must be documented. A periodic audit of the teleconsultation team is also necessary. All aspects and constituents of teleconsultation need to be monitored, and any deficiencies need to be rectified accordingly.[2,21,22]

Legal Aspects of the Setting of Telepsychiatry Practice

With healthcare originally coming under the ambit on consumer protection

act, doctors have become "service providers" and providing healthcare has become a challenging job, with a threat of legal issues hanging over their heads at all times, the recent amendment to the Act in 2019 [23] has created more debate and ambiguity about the legal interpretation of healthcare services. It would be inaccurate to consider the Consumer Protection Act, 2019, as medical negligence blind law, but rather it sets the tone for ethical and patient-oriented medical professionalism and strives to curb unfair medical practices.[24] As telemedicine is a new practice, it will be in the best interest of all parties involved that all be aware of the laws and regulations governing its use. The telepsychiatry setup should be compliant with the Information Technology Act, 2000,[25] the Information Technology (Intermediaries guidelines) Rules, published by the Ministry of Communication and Information Technology in 2011,[26] and the TPG, 2020 issued by the Indian Medical Council. Although the MHCA, 2017,[11] and The Rights of Persons with Disabilities Act, 2016,[27] does not explicitly lay down laws to govern telepsychiatry practice, it is important to understand that as most of the mental health services come under the purview of MHCA 2017, and the service provider must run telepsychiatry services in accordance with the same. Also, the service provider must take care to ensure that the services are disabled-friendly. This can be done by ensuring that the technology is friendly for all types of disabilities or by having other people assist those in need in a comfortable manner. Telepsychiatry service providers can, therefore, be held liable for any misuse or breach of privacy and data under any of the laws mentioned above.

Challenges of Running Telepsychiatry Services

Legal and Ethical Issues

Legal and ethical matters such as a duty of care, role in emergencies, privacy, and confidentiality, the security of data, and defining the duties and role of the specialist consultant at a site distant from the patient are a major challenge. This crucial ethical issue of duty of care can be addressed by consultant services rather than therapist services via telepsychiatry. The consultant does not directly assume responsibility (which may be difficult to carry out, e.g., in emergencies), but at the same time provides support to the primary care professionals present at the site of care.[28] Also, this arrangement might resolve the "tele" versus face-to-face care debate with the essential components of empathy and human interaction not being disrupted by technological limitations.

Training of the Staff

It is another challenge in the effective functioning of telepsychiatry services. The staff needs to be formally trained to operate devices and the platform used for teleconsultation. They should also be alert and learn to troubleshoot any issues arising before or during a consultation.

Health Insurance

In 2018, the Insurance Regulatory and Development Authority of India (IRDAI) issued a directive to health insurance providers to include mental illnesses in medical insurance policies,[29] in accordance with MHCA, 2017. Ayushman Bharat, a landmark initiative from the Government of India, providing health coverage to its citizens, has accepted 17 of the 21 proposals from the Indian Psychiatric Society (IPS) and NIMHANS. However, private psychiatry has not been included in Ayushman Bharath,[30] and there has been a directive to the insurance providers by the IRDAI to cover expenses incurred from accessing telemedicine services.[31]

Professional Indemnity Insurance

Similarly, many private insurance providers have started to provide indemnity cover for the disputes arising from telepsychiatry services for a professional.

Future Direction

Telepsychiatry has tremendous untapped potential. As technology advances, telepsychiatry services will continuously improve itself. Use of asynchronous methods to record detailed case history and send across lab investigations, radiographic images etc., will familiarize the psychiatrist with the user and decrease the consultation time while increasing the quality of the care provided. Perhaps, advances in augmented reality and virtual reality would help in bridging the empathy gap, which currently exists, by simulating a real-world experience for both the service user and the provider.

Conclusion

The technology required to run telepsychiatry services is available not just in urban but in almost all parts of the country. The NMHS (2015–2016) has found that the treatment gap for mental illnesses ranges between 70% and 92%.[8] While the lack of human resources is one of the biggest reasons for the wide gap; studies have shown telepsychiatry consultations could be an alternative and innovative approach to bridge this gap in low-resource settings.[32] Telepsychiatry services can be set up quickly and do not require large financial investment; it offers promise as an innovative modality to reach out to the vast majority of people who are in dire need of good quality psychiatry services and mental healthcare. Telepsychiatry helps in realizing the vision of the WHO to provide cost-effective, good quality services to all irrespective of their socio-economic status.

Declaration of Conflicting Interests

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

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Economic Perspectives on Setting up and Running Telepsychiatry Services in India

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ABSTRACT

Background: Telemedicine Practice Guidelines, 2020 and Telepsychiatry Operational Guidelines, 2020 can be potential game changers in the practice of medicine in India. They provide legal grounds for the practice of telemedicine. The economics of setting up and running telepsychiatry services vis-à-vis in-person services in India is discussed in this paper to aid the practitioners in understanding the costs involved in each of these modalities.

Methods: Costs for various hardware, software, real estate, and human resources are collated from various sources. Telepsychiatry vs. in-person setup is compared for the costs involved.

Results: Telepsychiatry consultation will cost much lesser to that of in-person consultation.

Conclusions: Telepsychiatry is an economically viable option. There are many benefits and hurdles in telepsychiatry practice. It is a step towards providing psychiatric services at the doorstep in compliance with the Mental Healthcare Act 2017, upholding the rights of persons with mental illness. It will benefit the practitioner, the patient, and the society.

Keywords: Costs, economics, telemedicine/telecare, telepsychiatry

Board of Governors, in supersession of the Medical Council of India in partnership with the National Institution for Transforming India (NITI Aayog), released Telemedicine Practice Guidelines 2020 (TMPG) on March 25, 2020—a potential game-changer in the practice of medicine in India. The guidelines constitute Appendix 5 of the Indian Medical Council (Professional Conduct, Etiquette, and Ethics) Regulations 2002 (IMC regulations).[1] It was the right time to embark upon the rarely charted territory in view of the current coronavirus disease (COVID) pandemic. It will enable the registered medical practitioner (RMP) to provide healthcare using telemedicine. Indian Psychiatric Society and Telemedicine Society of India, in collaboration with the National Institute of Mental Health and Neurosciences (NIMHANS), soon brought out Telepsychiatry Operational Guidelines 2020 (TPOG) on May 26, 2020.[2]

Telemedicine practice is not new to India as the Indian Space Research Organization had initiated Telemedicine Pilot Project as early as 2001. NIMHANS had adopted this initiative in 2005. In the late 2000s, Schizophrenia Research Foundation also started utilizing telemedicine. The Ganiyari model 2012 also used telemedicine to cater to rural and tribal areas of Bilaspur, Chattisgarh.[3] Technology has not only been used to provide teleconsultations but also for educating patients and the general public, providing information about treatments and disease, psychological assessments, etc.[4]

If telemedicine practice was already existent, one might ask, then what is the requirement of guidelines now? The dilemma regarding the legality of telemedicine practice was created by a verdict on a bail plea "Deepa Sanjeev Pawaskar and another vs. The State of Maharashtra" given by the High Court of Maharashtra (pronounced on July 25, 2018). In this case, a post-cesarean patient who presented to the hospital with vomiting was re-admitted and treated with instructions over the telephone. The lady succumbed to death later, and negligence was alleged. However, the culpable negligence charge held against the doctors was not for instructing telephonically, but for issuing the prescription without diagnosis.[5] Indian Medical Association East Delhi branch went overboard at that time issuing a notice

to doctors that they should not consult over phone/WhatsApp as it can be punishable under Indian Penal Code, section 304 (punishment for culpable homicide not amounting to murder).[6] This was but a gross misinterpretation of the judgment; nevertheless, the practitioners got scared. In this COVID situation, when the general medical care has suffered due to the travel restrictions and closure of healthcare facilities, TMPG has presented a fresh opportunity to allay fears connected with telemedicine practice. TMPG, in the section "Telemedicine Applications" (Section 1.4), says that consultation can be through video, audio, text-based, or via asynchronous (email/fax), while the section "Technology of Telepsychiatry" (Section 3) of TPOG describes the hardware and software requirements for setting up and running telemedicine consultations.

One should also note that the conservative annual estimated cost to implement Mental Healthcare Act (MHCA) 2017 would be 94,073 crore rupees if used in the traditional way of the brick & mortar model.[7] We see that India has today the world's cheapest rate of data, and India has about 600 million Internet users. If we use telemedicine both for logistics and service delivery for implementation at center & state government levels, then the cost can be reduced drastically with substantial gain for people suffering from mental health problems.

The economics of setting up and running telepsychiatry services vis-à-vis in-person services in India is discussed in this paper to aid the practitioners in understanding the costs involved in each of these modalities. The cost calculation of setting up and running telepsychiatry and in-person services was attempted to assist the practitioners in understanding the costs involved in each of these modalities. There is a notion that telepsychiatry practice would be a burden on the practitioners and the patients economically. Hence, a detailed cost calculation is in order. This paper discusses only the costs involved in technology and real estate and does not discuss the consultation costs, which are determined by expertise, time duration, and timings of the consultation. The cost of care for the patient, however, would include both. We discuss the setup in terms of a single practitioner, group of practitioners sharing the premises (polyclinics), and larger institutes with multiple departments.

Materials and Methods

Costs for various hardware, software, real estate, and human resources are collated from various sources. Telepsychiatry vs. in-person setup is compared for the costs involved.

Single Practitioner

The costs can be grouped under one-time investments and recurring costs for hardware and software.

1. Hardware

a. Dedicated office mobile/landline: Will help in better organization and management of telepsychiatry services. Bharat Sanchar Nigam Limited offers a combination of 20 Mbps till 100 GB with free calling services for Rs. 499 with one month Fixed Mobile Convergence charges as a security deposit, which ranges from Rs. 120 (rural) to Rs. 160 (urban).[8]
   If one wants to buy a smartphone which can be used for consultation too, it will cost above Rs. 15,000 for a 4G enabled smartphone with 6 GB random access memory (RAM). The cost of the smartphone can vary according to the features and brand, ranging from Rs. 15,000 to premium phones, which may cost around Rs. 120,000. The cost of a subscriber identification module (SIM) card is anywhere between Rs. 10 and Rs. 5,000 (depending on the tariff of the plan with which the SIM is free). It costs about Rs. 500 for 3 GB per day, which is sufficient for a mid-range user (not streaming high definition videos).
   A dedicated email and social media profiles are free to open and use.
   The same setup is applicable for in-person services too.

b. Internet connection: As discussed earlier, it would cost about Rs. 500 for 3 GB per day Internet, whether it is fiberoptic or landline-based or mobile-based. A 1-hour video call consumes about 200–300 MB of data.[9] A WhatsApp voice call consumes about 45–50 MB per hour.[10] A 3 GB per day would be sufficient for video consultation for about 10 hours.
   Having two Internet connections from different Internet service providers will help in the case of a signal drop. Hence, it would cost about Rs. 1,000 per month for the Internet.
   This is an additional cost for setting up telepsychiatry services. Although many choose to have an Internet connection in their clinics, it is not mandatory and hence is considered as an additional cost in this paper.

c. Wi-Fi router: Having at least a 2.4 GHz bandwidth Wi-Fi router will be beneficial. The router would cost about Rs. 2,500 to Rs. 5,000.
   This, too, is an additional cost for telepsychiatry services.

d. Laptop/desktop: A laptop or a desktop with a web camera with a good graphics card, at least 8 GB RAM with an inbuilt operating system, can cost Rs. 30,000 to Rs. 50,000. Web camera costs between Rs. 1,500 and Rs. 40,000 (for conference cameras). A web camera with 720p with inbuilt mic costing around Rs. 2,500 would suffice for a consultation.
   This is optional equipment. Many may choose to have a desktop/laptop in their clinics to aid in setting up appointments, the printing of receipts, etc. Hence, practitioners may utilize it even in in-person consultations.

e. Headphones: An over-the-ear headphone with cuff helps in background noise reduction and can be used for extended periods, unlike in-the-ear earphones. It costs about Rs. 3,000 and Rs. 5,000 for a headphone with a built-in mic.
   This equipment is exclusive for telepsychiatry services.

f. Printer/scanner: An all-in-one printer will be handy to take printouts of the notes and scan the prescriptions. It costs around Rs. 5,000 to Rs. 20,000 (for dual-sided, faster printing capabilities).
   This, too, is a piece of optional equipment like laptop/desktop.

g. Writing material: A4 white paper costs about Rs. 400 to Rs. 500 for 500 sheets. A pen costs about Rs. 10 per piece.
   Both telepsychiatry and in-person consultation will require writing material.

h. Telepsychiatry chamber: Lightings—three warm, white light emitting diode (LED) lights (3,200K–4,000K) for three-point lighting to avoid shadows can be planned. A 20W smart LED Batten would cost about Rs. 2,500. A smart LED is beneficial as one can change the intensity and color of the light, depending on the environmental conditions.

Soundproofing: soundproofing a 10 feet × 10 feet × 12 feet room with foam costs about Rs. 200,000. The presence of furniture, floor mats, and thick curtains over the window also reduces echoing in the room. Curtains and floor mats would cost about Rs. 1,000 to Rs. 2,000 per piece. A computer table with a keyboard tray costs about Rs. 5,000 to Rs. 7,500. An office chair with good back-support costs about Rs. 5,000 to Rs. 10,000. One need not invest in soundproofing if it is not necessary.

The consultation chamber in the clinics can be converted to aid in teleconsultation. A practitioner may choose not to have a consultation chamber at all and provide only telepsychiatry consultations from their home. In this case, a room with the above specifications would help in delivering better telepsychiatry consultation.

i. Electricity: About 250 kWh is utilized by desktops with a modem, speakers, etc. It costs about Rs. 6 per unit (kWh) in India, which works out to Rs. 1,500 per year or Rs. 125 per month.[11]
This cost will be added to the electricity costs of the clinic.

j. File storage: External hard disks for additional storage costs above Rs. 3,500.
This is optional.
One needs to remember that most of the electronic hardware depreciates over time and needs to be replaced once in 2–5 years.

2. Software

a. Audio-video: Text messages are integrated into the tariffs of mobile phone plans. On average, 100 short message services (SMS) can be sent per day. Other text messaging services like WhatsApp are free of cost. Emails may consume less than 1 MB per mail.
Voice calls are also integrated into the tariffs of mobile phone/landline plans. Voice calls over WhatsApp/Skype/Zoom/Google meet/Facebook etc. consume data but are free of cost. They have a cap on the number of participants, the time of each session, etc. Software for typing and printing the notes and prescriptions would be required. It costs about Rs. 8,000 for a one-time purchase of Microsoft Office Home & Student 2019 and Rs. 4,200 per year for Microsoft 365 Personal. A one-time purchase would be sufficient. One may also choose to use freely available software for this purpose.
A practitioner may choose to have a computer with up to date software even in an in-person setup.

b. Electronic health record (EHR): EHRs should only augment the telepsychiatry consultation. These are platforms that offer facilities for video consultation, booking of appointments, and follow-up reminders for patients. Some platforms provide these facilities cost about Rs. 1,000 per month. Additional storage and servers may cost more. A dedicated server hosting in India may cost about Rs. 10,000 per month.[12] Cloud storage ranges from Rs. 800 to Rs. 1,500 per year for 100 GB of storage. Cloud storage hard disks of 2 TB capacity cost about Rs. 20,000.
An electronic medical management system can cost anywhere between Rs. 1,500,000 and Rs. 20,000,000 (for a bigger hospital) as a one-time investment and recurring costs for maintenance. The cost would depend on the features that can be added in the software like appointment management, prescription dispersal, availability of medical records to both clinician and patient, reminders to the patient for follow-up consultation, etc. At this stage, we do not recommend the use of costly EHRs for the usage by single practitioners.
A practitioner can use the above-mentioned tools for consultation or use old pen and paper methods to record the details of the consultation, update the same in the patient's file, and provide the necessary details as per MHCA 2017 to the patient while sending the prescription would be cost-effective. It will also absolve the practitioner from the additional burden of data storage and possibilities of data leak connected to it.
EHRs are currently not necessary to run telepsychiatry. But many practitioners choose it as it will ease the processes of registration, tracking of follow-ups, etc. A word of caution is to be aware of the clause of "advertisement" of IMC regulations.

3. Real estate
It is difficult to provide an accurate real estate cost as the costs vary according to the geographical area and commercial value of that area. In a metropolitan city like Bengaluru, the rental prices vary from Rs. 45 to Rs. 125 per square foot per month.[13] For a chamber of size 500 square feet, the costs would be about Rs. 22,500 to Rs. 62,500, an average of Rs. 50,000 per month.
As discussed earlier, a practitioner may choose to provide telepsychiatry consultations from their homes. In such a case, this cost will be exclusive to in-person consultations.

4. Human resources
Many practitioners hire a receptionist to manage their appointments and fee collection. On average, the salary varies from Rs. 10,000 to Rs. 20,000 per month.
With booking an appointment through text message or email, digital payments, and EHR available, the need of a receptionist comes down drastically. Due to this reason, this cost can be termed as exclusive to in-person consultations.

5. Others

a. Professional indemnity insurance (PII): We are slowly turning into a litigious society. It is better to have a PII. Many governments and private insurance companies provide PII. The costs will vary depending on the type of practice, area of practice, individual vs. hospital, etc. The cost of the premium may vary from 0.10% to 0.20% of the sum insured and Goods and Services Tax additionally. For example, for Rs. 1 crore of insurance, it will cost about Rs. 12,000 per annum.[14] Whether the costs of the premium will increase for telemedicine practice needs to be seen.

b. The registration fee for setting up a clinic: In the state of Karnataka, ac-

cording to Karnataka Private Medical Establishments Rules (amendments) 2018, the registration fee for setting up a clinic without additional facilities is Rs. 2,500. The registration is valid for 5 years.[15]

This cost is exclusive for an in-person consultation setup.

c. Biomedical waste management: Every clinic will have to register for biomedical waste management and manage the waste according to the rules of the land. It costs about Rs. 750 per month for this.

This cost is exclusive for an in-person consultation setup.

d. Other insurances—fire safety, theft, etc.: The cost of this item varies depending on the scale of the clinic, additional facilities, etc. On average, it costs about Rs. 6,000 to Rs. 10,000 p.a. for a small-scale clinic

This cost is exclusive for an in-person consultation setup.

A practitioner can choose to use:

1. Only a smartphone with Internet connectivity; consult audio/visually; write the notes and prescription on a sheet of paper; transmit it to the patient. One-time setup costs would be about Rs. 40,000, and recurring costs would be around Rs. 1,500 to Rs. 2,000 per month.
2. A laptop/desktop with wired Internet connectivity, printer-scanner along with the above, would cost about Rs. 15,000 to set up and about Rs. 2,000 to Rs. 5,000 per month as recurring costs.
3. An EHR system with the above with an additional cost of Rs. 1,000 per month and with server and storage facilities for additional costs, as discussed earlier.

For an easier understanding of the costs involved, a table of costs is provided in **Table 1**.

By using basic equipment that is cost-effective like a non-premium smartphone ranging from Rs. 15,000 to Rs. 25,000, a headphone worth Rs. 3,000 to Rs. 5,000, mobile Internet package of 3 GB per day, and additional wired Internet connection worth Rs. 1,000 per month, a single practitioner may practice telepsychiatry from his home. This setup would cost about Rs. 30,000 as a one-time investment and about Rs. 1,500 per month as recurring costs with an additional cost of Rs. 1,000 per month if EHR is used.

Additionally, PII will be required. For a practitioner who sees about four to five patients per day or 100 patients in a month or 1,000 patients per year, the cost of telepsychiatry would be about Rs. 60 per patient to recover the costs of the setup in 1 year. When EHR is used, the prices may go up to Rs. 70 per patient.

If the practitioner already has a dual-SIM smartphone and wants to use the same phone with an extra SIM for consultation, without additional wired Internet facility, the costs would be about Rs. 500 to Rs. 1,000 per month plus PII costs, translating to Rs. 20 to Rs. 25 per patient. If EHR is used, the costs may go up to Rs. 30 to Rs. 35 per patient.

These estimates are barring the service costs of the consultation. Service costs will depend on the field of medicine, the expertise of the consultant, the time required for consultation, geographical area, etc.

A single practitioner can have two kinds of telepsychiatry models.

1. Hybrid or Blended Model: Herein, a patient can be seen both by coming to the clinic in person and through telepsychiatry as and when required depending on the patient's distance from the clinic and cost of travel, etc. The cost of running a telepsychiatry facility would be added to that of running a clinic.
2. Standalone Virtual Clinic: Herein, a patient can take consultation from any place of their choice without visiting the doctor in person. Only the cost of electronic gadgets and the broad-

TABLE 1.

Cost of Setting Up Telepsychiatry Vis-à-Vis In-Person Consultation

		Telepsychiatric Services	
SN	Budget head	One-time cost (minimum)	Recurring cost (per month)
Required exclusively for teleconsultation			
1	Smartphone	Rs. 15,000	–
2	Headphone	Rs. 3,000	–
3	File storage (optional)	Rs. 3,500	–
4	Electricity (additional)	–	Rs. 125
5	Social media	Free	Free
6	Video conferencing/audio/text	Free	Free
Required for both telepsychiatry and in-person consultation			
1	Writing material	–	Rs. 500
2	Infrastructure (lights/table/chair/floormat/curtain, etc.)	Rs. 20,000	–
3	Indemnity insurance	Rs. 12,000	Rs. 12,000 (p.a.)
4	Internet tariff (SIM/landline based) (optional)	Rs. 500	Rs. 500
5	Wi-Fi router (optional)	Rs. 2,500	–
6	Laptop/desktop (optional)	Rs. 30,000	–
7	Printer/scanner (optional)	Rs. 5,000	–
8	Software for typing (optional)	Rs. 8,000/free	–
9	EHR (optional)	–	Rs. 1000
Required exclusively for in-person consultation			
1	Real estate	–	Rs. 50,000
2	Human resources	–	Rs. 20,000
3	Registration fee	Rs. 2,500	Rs. 2,500 (once in 5 years)
4	Biomedical waste management	–	Rs. 750
5	Other insurances	Rs. 10,000	Rs. 10,000 p.a.

EHR: Electronic Health Record; SIM: subscriber identification module.

band connection would suffice to run telepsychiatry. This is especially a boon for young budding psychiatrists who can avoid the financial burden of a loan at the beginning by utilizing telepsychiatry services and can have tie-ups with nearby hospital/nursing homes for inpatient care if and whenever required. Later on, depending on their success with a virtual clinic, they can either continue with it or convert it into a blended model.

Polyclinics

For a polyclinic facility, either each consultant can run their own telepsychiatry consultation from their chambers, the cost of which would be the same as mentioned above, or have a dedicated telepsychiatry chamber, which all the practitioners could use. The requirement of bandwidth will vary according to the number of persons using the telepsychiatry facility at the same time. A general polyclinic has 5–10 practitioners. One router would work well, even with five systems connected to it. Hence, one to two Internet connections would suffice. A central printer/scanner, if required, would be cost-effective. Although the real estate values for running a bigger space would increase, the costs would be shared by all the practitioners, and hence, the costs would be similar to a single person setup.

A polyclinic might still want to hire a receptionist to maintain the premises and records.

The costs for five practitioners running telepsychiatry from their own chambers with a shared Internet connection with the receptionist, each seeing about 1,000 patients per year, would come to Rs. 50 per patient and Rs. 20 without a receptionist.

Institutes

A larger institute would require dedicated infrastructure with multiple consultation rooms, higher bandwidth Internet, and each room equipped with desktops with a good camera, speakers, and lighting system. The electricity required for running such a facility would also be higher.

One should also remember that some of the costs of setting up the telepsychiatry practice are the same as setting up an in-person practice, for example, having a dedicated phone number, furniture, writing material, electricity, etc. Many prefer to have Internet connectivity, a desktop/laptop, and printer-scanner in their clinics. In these cases, the additional costs of setting up telepsychiatry consultation would be a rearrangement of lights, headphones, and external hard disks, if required.

Results

If we compare the costs of in-person consultation with that of telepsychiatry consultation, telepsychiatry will cost much lesser. For a single practitioner, a chamber (Rs. 50,000) and the receptionist (Rs. 20,000) will cost about Rs. 700 per patient as opposed to Rs. 60 to Rs. 70 per patient in telepsychiatry.

Discussion

Benefits

We can look at the benefits from three angles: that of a practitioner, a patient, and society. An in-person consultation is staggeringly 10 times costlier than telepsychiatry consultation. It is an economically viable option for the practitioner to run telepsychiatry as the costs incurred are much lesser and would fall within the ambit of rates fixed by the Government of Karnataka for outpatient consultation (at par with Central Government Health Scheme, which is Rs. 135).[16]

Apart from these direct cost benefits, indirect cost savings for the practitioner will arise from reduced travel time and costs, reduced exposure to air/noise pollution, reduced hassles of facility management of an in-person clinic, and so on.

For the patient, the cost of consultation may come down as some of the cost-benefit is transferred to them; a reduction in travel costs, a reduction in travel costs and travel-time, no requirement for the patient and their attendant having to apply for leave, and taking consultation at the comfort of home are some of the benefits.

Society stands to benefit by the promise of care at doorsteps, better implementation of MHCA 2017, reduced stigma (as the patient does not go to the hospital), better follow-up rates, better health translating to better functioning of the individuals and reduced carbon footprint.

The government of India is pushing for the digitization of health records by having nationwide EMR systems for the hospitals. Currently, the online registration system is functioning for government hospitals to aid in digitizing the hospitals.[17]

Psychosocial support in disaster situations is another area where telemedicine can have a significant role. It will be cost-effective if, in such situations, multiple teams from different parts of the world can simultaneously render service.

Unlike other branches in the medical sciences, in psychiatry, the primary mode of examination is mental status; hence, it stands better poised to provide services using telemedicine. Thus, it will be a boon to cover the treatment gap for mental health in our resource-restricted country. As telepsychiatry services provide greater anonymity and confidentiality, it will encourage more patients to seek treatment within the confines of their homes itself. The increased service utilization thus arising will improve the quality of life of more and more people and thus contributing to the cumulative productivity at the national level.

Hurdles

Everything is not rosy, and there are a few hurdles too. As the practitioner can consult anyone from any part of the country, and with the Consumer Protection Act 2019,[18] when the consumer can approach the consumer forum at their place, the practitioner may have to travel to the consumer's place if required.

Economic growth surrounding the travel of patients, their attendants, and practitioners like the cost of travel, food for them, recreation, etc., may be lost as the consultation can be done from their homes. Digital literacy in India is still low, and usage of technology by rural Indians for availing telepsychiatry is still debatable, but the patient can travel to the nearest Primary Health Centre where the RMP over there can avail telepsychiatry for the benefit of the patient.

One should remember that one requires 10–15 minutes of additional time for documentation while using telepsychiatry.

A practitioner can use free social media platforms like Facebook/WhatsApp etc.,

or use dedicated video platforms like Skype/Zoom/Google meet/Microsoft Teams, etc. for consultation. While using a social media platform, one should remember that the patient has access to this platform all the time and hence can seek consultation anytime they wish to. It may not be a convenient time for the practitioner! This is unlike the appointment system in in-person consultations, where the patient cannot walk-in any time into the chamber. The private life of the practitioner can get compromised in these situations. However, using a dedicated video platform has the advantage of being offline during nonconsultation hours and can safeguard the practitioner's private life. Another flip side is that the patients may not log in at the given time for various reasons. In such cases, precious time is lost. Whether this lost time is charged a fee is debatable.

This brings us to another major issue with telepsychiatry: payment of the professional fee by the patients. Fee can be collected either before the consultation or after the consultation. In in-person consultation, the fee can be calculated depending on the time spent on discussing the case. Many have faced a situation where patients have failed to pay the video consultation after the consultation. Practitioners have felt embarrassed to ask for their reasonable fee when there is no response from the patient multiple times. Sometimes patients have also called the practitioners seeking medical advice beyond their appointment and have demanded answers "as they have paid for it." One way of handling this issue is to collect the fee before consultation and specify the consultation duration. In case of an extension of the consultation, one may have to book another appointment. This is akin to top-up recharges. Dedicated video platforms will help in this regard. It will also provide the fee for the time spent by the practitioner whether the patient was present or not. A practitioner can reimburse the patient in case of cancellation on case-to-case basis. An EHR platform can aid in appointment management to payment options—many payment gateways attract 1%–2% user fees. One can think of dedicated chat options to maintain contact after the consultations too.

The consent and terms and conditions to be signed up before a consultation as a prerequisite should be in place. Apart from providing the usual information as mentioned in the TPOG, it can also include aspects like the duration of consultation, the fee to be paid, contact number for emergencies, and contingency measures if there is a loss of Internet connectivity.

Another critical issue is the validation of e-prescription by pharmacies. Many pharmacies refuse to provide medications based on the scanned copies of prescriptions and/or e-prescriptions. There are also chances of misutilization of the prescription by the patients to buy the medicines from multiple pharmacies as the e-copy cannot be marked after issuing medications by the pharmacy. A nationwide network of pharmacies and tracking systems for the prescriptions may solve the issue but is haunted by the possibility of a security breach.

Limitation of the Paper

The estimates of the costs are rough estimates as the costs vary from time to time. Many practitioners may run both telepsychiatry and in-person consultation and for the same patients.

Conclusion

Telemedicine and telepsychiatry practice could be a game-changer in the way consultation is done. Telepsychiatry is an economically viable option, at least 10 times less costly than an in-person consultation. There are many benefits and hurdles in telepsychiatry practice. It is a step towards providing psychiatric services at the doorstep in compliance with the Mental Healthcare Act 2017, upholding the rights of persons with mental illness. It will benefit the practitioner, the patient, and the society. The government can provide incentives in terms of tax benefits etc. to the practitioners and patients to use the telepsychiatry facilities.

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Approach to Informed Consent in Telepsychiatric Service: Indian Perspective

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ABSTRACT

Consent is an essential and important medico-legal prerequisite for a patient's treatment. This necessitates the service provider to participate in the informed consent process and discuss the risk-benefit of the proposed treatment, the best available treatment, engage in shared decision-making process, opportunity to convey their view and thereby limit chances of legal liability for all parties. The clinician should have ample knowledge and skill pertaining to the informed consent process and also have adequate understanding of medical ethics and law. This article provides an overview on informed consent pertaining to telepsychiatric services in India.

Keywords: Psychiatry, consent, telepsychiatry, India

Consent is a process that allows for free expression of an informed choice by a capable person to participate in a treatment or a study.[1] The motive of consent is to respect a person's autonomy and protect his/her right to choose by a rational decision-making process.[2] Informed consent is a process of communication between a patient and a doctor. The doctor gives the patient enough information so that the patient can make an informed decision regarding the proposed procedure, test, examination, or treatment; the patient makes an informed decision after reasonably foreseeing the consequences of the choice.[3] Informed consent is an important medical, ethical, and legal prerequisite for the treatment of a patient; failure to do so is an offense and a crime.[4] The informed consent has a legal connotation and focuses on the choice or free will of the individual to decide on the assumption that the person has the capacity to make treatment-related decisions. Consent is primarily based on three guiding principles, autonomy, beneficence, and justice for participants.[5] Consenting procedure gained relevance and has played a vital role in the delivery of health care due to the rapidly changing approach of modern medical practice and the transition from a paternalistic care model to a collaborative care model.[6] This is also partly due to the evolving approach of treating healthcare seekers as service users and not just as patients. The introduction of newer technologies, innovation, data science, and artificial intelligence (AI) into modern medical technology has also brought a change.

The concept of informed consent is universally accepted and now constitutes Article 7 of the International Covenant on Civil and Political Rights of the United Nations. This also served as the basis for the multiple international conventions such as the United Nations International Covenant on Civil and Po-

litical Rights, the International Ethical Guidelines for Biomedical Research, and the Council for the International Organization for Medical Sciences (CIOMS); all have proposed ethical standards for informed consent.[2] Several medical associations, organizations, societies, and professional bodies have established a specific protocol for various invasive and non-invasive medical and surgical procedures, by examining the law of the land and the resolutions adopted by international conventions on consent procedures. Most guidelines recommend either implicit or explicit consent for any person-to-person medical interaction, and the same principles are applicable to telemedicine and virtual consultation.[7] Consent in medical practice in general and psychiatry, in particular, has an amplified legal importance, in patient care, treatment, and research. The consent process has several unique challenges, especially in persons with mental illness, since this depends on insight, psychopathology, and possible cognitive deficits, which hamper the person's capacity to consent.[2] In this regard, Australia, India, United Kingdom, and other high-income countries have separate laws regulating admission, discharge, rehabilitation, and capacity assessment.[8]

Evolution of Consent in Telepsychiatry Practice

The concept of telepsychiatry draws its roots from "snail mail" correspondence therapy; Sigmund Freud corresponded with patients through letters. With easy access to a telephone, consultations over the telephone were done widely in the 1990s and early 2000s. The consenting process during the earlier years was unclear. Later in 1985, the American Psychiatric Association opined that therapy provided almost exclusively by telephone was "unusual, inappropriate, and not accepted medical practice".[9] As informed consent is required before providing any treatment, some professional organizations in the early 2000s noted the need for informed consent to e-therapy and other forms of cyber-medicine and telemedicine.[10] The consent process in multicentric clinical trials using telemedicine also presents a unique challenge. Although the process of obtaining informed consent through telemedicine has become streamlined, there are still many challenges that require further attention from the electronic media.

However, the technological advancements in the last three decades, such as easy access to the internet at remote locations and the use of applications (e.g., email, teleconsultation, and conferences over the internet) and multimedia approaches (e.g., digital imagery and video), have made the information shared during consultation substantial enough to ensure a standard of effective healthcare delivery across the world. Studies on the effectiveness[11] acceptability, feasibility,[12] and satisfaction of telemedicine consultation are comparable to those conducted in person. In 2009, the World Medical Association guided the use of telemedicine for the provision of health care. In line with this, India, Malaysia, France, the United Kingdom, South Africa, and the state of California of the United States of America allowed telemedicine practice with informed consent.[7,8]

In India, the Indian Medical Council (IMC) published Telemedicine Practice Guidelines (TPG) in 2020, which allow for the legal practice of telemedicine.[13] The IMC has adopted the concept of telemedicine proposed by the World Health Organization[14] as "The delivery of health care services, where distance is a critical factor, by all healthcare professionals using information and communication technologies for the exchange of valid information for the diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of healthcare providers, all in the interests of advancing the health of individuals and their communities." The Indian Psychiatry Society, the Telemedicine Society of India, and the National Institute of Mental Health and Neuro Sciences (NIMHANS) have provided operational guidelines for telepsychiatry in India to give more clarity and for an easier interpretation.[15] Similarly, telepsychotherapy and telepsychiatric social work practice operational guidelines were brought out by their respective bodies of clinical psychology and psychiatric social work.[16,17]

Type of Consent and Telepsychiatric Consultation

The process of consent will form the basis of the fiduciary relationship between a patient and a doctor.[18] Indian Medical Council, Professional Conduct, Etiquette and Ethics Regulations, 2002 (IMC regulations) discusses consent for various medical and surgical interventions.[19] It says that the consentee should be sufficiently competent to enter into a contract and should, therefore, be at least 18 years old, of sound mind, and not excluded by any statute. The Mental Healthcare Act, 2017 (MHCA) Chapter 1 Section 2(i) describes informed consent for a specific intervention, to be without any force, undue influence, fraud, threat, error, or misappropriation and obtained after providing adequate information, including the risks and benefits of, and alternatives to, specific intervention in a language and manner comfortable to the patient.[20] Consent is a must for each consultation, and it may be implied or explicit based on who initiates the consultation. If there are any changes in the mode, approach, or if a new health care worker is involved in telepsychiatric services, separate explicit consent is required.

Implicit Consent

Implied consent is granted by the person and can be inferred from a person's behavior. In implied consent, clinicians can make certain assumptions based on human behavior and rational will. The treatment is provided in accordance with the principle of "best interest." An example of implied consent in a day-to-day medical procedure is when a person enters the consultation chamber by his or her own volition, and it may be deemed that the person has consented to the possibility of clinical diagnosis to be made. Consent to the instruction given by a doctor during the clinical examination may be inferred from the general submission of a patient.[21,22] As per IMC regulations[19] and TPG,[13] which allow the legal practice of telemedicine in India, one can draw a legal interpretation of implicit consent in the telepsychiatry practice when (a) any person voluntarily initiates the telepsychiatric consultation, and (b) any person voluntarily initiates email-

based asynchronous telepsychiatry follow up. Nevertheless, it is prudent to conduct an informal capacity assessment to know that the patients have the capacity to initiate the consultation.

Explicit Consent

Consent is actively expressed by the person, either orally or in a written form.[21,22] Any consultation initiated by the service provider, a specific examination procedure, a major diagnostic procedure, general anesthesia, a surgical operation need explicit consent. If an invasive examination or procedure, such as an incision or surgery or when sampling of body fluids is required, the patient's written consent is ideally needed. There are three special circumstances where explicit consent may not be necessary:

1. **Necessity**—Circumstance in which serious harm or death is likely to occur without intervention, and there is doubt regarding the capacity of the patient (e.g., catatonia, Neuroleptic Malignant Syndrome, delirium, drug toxicity).
2. **Emergency**—If there is a danger to the life or danger from the patient (risk to self, risk to other, risk to public or personal property as described by the Sec 94 of MHCA, 2017).
3. Judicial order to examine and opine on the patient.[20,21,23]

As per IMC regulations[19] and TPG, which allow the legal practice of telemedicine in India,[13] the need for explicit consent is advised for the following situations: (a) Sending an email or SMS reminder or service provider contacting the patients regarding the next follow-up. (b) Psychiatrist transmitting the prescription directly to a pharmacy, (c) Family members participating in the consultation process, (d) Individual telepsychotherapy or telecounseling, (e) Telefamily therapy, (f) Any new healthcare worker involved in the treatment process of the patient, (g) Telegroup therapy, (h) Audio or video recording of consultation, (i) The second opinion from the medical specialist.

How to Record and Store Telepsychiatry Consent

In India, many organizations or institutes offer a telepsychiatry-based follow-up to previously enrolled and consenting patients in the organization. The earlier consenting procedure was to take an in-person consultation and would rely on consent forms, which were signed by the patient or the nearest relative or nominated representative (NR; if the patient has lost the capacity and nominated the NR as per MHCA, 2017) before the initiation of tele follow-up.[20] This strategy would eliminate the inherent disadvantages of securing consent while using the virtual medium. It also helps streamline patient suitability for telemedicine consultation, which can make virtual consultations healthier and improve clinician satisfaction and patient experience. This approach can be adopted in providing care to psychiatric patients after discharge.[24]

However, explicit consent can also be taken digitally, and TPG has laid out the same in India.[13] In this context, the clinician can use a virtual or digital forum or technology to share the telepsychiatry consent or specific procedure-related information via email or SMS or audio message or video message to the client. Those who have further doubts can use the helpline number or chatbot to discuss further the procedure or consultation. Once they have understood the information, one can check whether they received adequate and full information about the nature, purpose, rationale of telepsychiatric consultations, or the specific procedures. The risk and benefits involved, the alternative options available, the economic implication of decisions, all are part of the information to be understood. However, in-person assistance may have to be provided if the online discussion is found wanting,

After that, if the patient is able to process the information and can make decisions rationally, then consent to the procedure can be taken by sharing one time password (OTP) or via e signature, digital signature, or by clicking "Yes" in the online informed consent form. Those who want to opt-out of the procedure can do so by not completing the application or not sharing the OTP or e-signature or digital signature or by not clicking "Yes" in the online informed consent form. For those who agree to consent via OTP or e-signature or by clicking "Yes" in the online informed consent form, an automatic consent form can be produced and stored in the patient database. The agreed consent form for virtual or telepsychiatry can be shared with the patient or family treatment in a portable document format or Hypertext Markup Language (HTML) formats via email or other asynchronous modes. The minimum duration of consent storage of consent form should be in accordance with the IMC regulations.[19] Even though consent was taken digitally, a copy of the explicit consent form should be kept as a hard copy for record and documentation purposes.

According to the TPG, 2020, a registered medical practitioners (RMP) "should abide by the IMC (Professional Conduct, Etiquette and Ethics) Regulations, 2002 and with the relevant provisions of the IT Act, data protection and privacy laws or any applicable rules notified from time to time for protecting patient privacy and confidentiality."[13] However, it exonerates the RMP of any responsibility for "breach of confidentiality if there is reasonable evidence to believe that patient's privacy and confidentiality has been compromised by a technology breach or by a person other than RMP. The RMPs should ensure that a reasonable degree of care while hiring such a service."[13]

Assessment of Capacity to Consent for Telepsychiatric Consultation and Treatment

The assessment of capacity is an important legal component of informed consent, especially in psychiatry. Mental capacity is considered to be time- and task-specific and dynamic. According to the MHCA, 2017, capacity is assumed to be present in every person, including a person with mental illness (PWMI), and they can make a valid decision unless there are valid reasons to doubt the legal assumption.[20] The Mental Capacity Act of England and Wales of 2005 guidelines are more systematic and not based on a person's condition or behavior.[25] However, as per the Indian MHCA, Chapter II, and Section 4, capacity needs to be assessed on the following three principles: (a) the capacity to understand relevant information, (b) appreciation of reasonably

foreseeable consequences of a decision, and (c) communication of the decision by any means. Based on these broad principles, the expert committee formed by the Central Mental Health Authority of India has developed the guidance document to the practicing medical officers (MOs) and mental health professionals (MHPs) to assess the capacity. As per the guidance document and based on the principles of capacity assessment, certain conditions where the assessment of capacity done in quick time as one of the criteria is obviously not met are (a) certain occasions of violent behavior, (b) excitement, (c) catatonia, (d) a non-communicative confused patient, (e) delirium (when not in a lucid period), (f) substance intoxication, and many similar conditions. If not, then the MOs or MHPs can go ahead and assess the capacity. In this, the MHPs or MOs are expected to check for general orientation and the ability to follow verbal commands and then be able to appreciate his or her mental health condition. If it is a PWMI, depending on whether their ability to respond to the question correctly, MHPs or MOs proceed with the interview to check whether PWMI can assess the risk and benefit and make a decision after weighing the consequences. They may ask to seek further information if they have any doubts or queries before making a decision. Based on that, MHPs or MOs have to make a binary decision that he or she has the capacity for treatment decisions or not. If capacity is lacking, support from his or her NR will assist the person in making decisions; however, if the patient has made an advance directive, then the MHP is obligated to honour the same. The same principle applies to the MHPs or MOs while doing a tele-based capacity assessment for participation in telepsychiatry consultation, therapy, counseling, treatment, and discharge.[26] The consent may be either implied or explicitly based on existing guidelines laid down by the IMC regulations,[19] and TPG. The consent should be taken for the following: (a) consent to participate in audio- or video-based telepsychiatric services through the online open digital platform, (b) consent for telepsychiatry consultation or therapy or counseling based on who initiates the telepsychiatry consultation, and (c) consent for sharing the e-prescription to the pharmacy directly. The consent process has to be recorded based on the TPG.[13]

Components of Telepsychiatry Consent

1. Capacity to consent for telepsychiatric consent procedure.
2. Consent for telepsychiatric consultations over the face to face consultation or therapy
   - Nature, purpose, the rationale behind telepsychiatric consultations over the face to face consultation or therapy
   - Information about tele-psychiatric consultations, in case of therapy (how long, how many session)
   - Risk and benefit of telepsychiatric consultations over direct or in-person or face to face consultation
   - Reasonable alternatives to the type of teleconsultation (video conference is better than audio)
   - Economic considerations related to teleconsultation over direct or in-person or face to face consultation
   - Limitation about telepsychiatric consultations—emergency care.
3. Consent to sharing of e-prescription to the pharmacy.

Approach to Telepsychiatry Consent in Special Situations

Adults Lacking Capacity

In case of adults lacking capacity who are not in a position to give consent, MHPs need to check for Psychiatric Advance Directive (PADs) or NR. If he or she has not made NR or PADs in the past, immediate family members can act as NR as per MHCA, 2017. Before providing a proxy consultation, the clinician has to ascertain following things: (a) documented diagnosis of dementia, (b) severity as "moderate" or "severe," (c) loss of capacity to consent by the patient, (d) a person seeking proxy consultation needs to have an authorization letter from the patient or if the clinician can recognize and confirm the identity of the family member, an authorization letter will not be necessary, and the clinician can proceed to provide telepsychiatry follow-up. An oral or written consent from the patient's NR has to be taken while delivering telepsychiatric consultation to the patient.

Minor (Children and Adolescents)

In the case of minors, who are less than 18 years of age, parents act as NR. The clinician has to ascertain the following things: (a) identity document with proof of age, which shows the person is less than 18 years and (b) documented proof that he or she is the parent of the child or the clinician can recognize the parents (without a documented proof). The oral or written consent from the parents needs to be taken while delivering telepsychiatric consultation to the patient.

Emergency Care

The telepsychiatric consultation or counseling is not suitable during a psychiatric emergency. However, RMP can consult psychiatrist or specialist through technology to provide emergency psychiatry care. Legal liability of care lies with the RMP, who initiated the consultation with the specialist.

Family Member in Consultation

To take clear oral or written consent from the patient and ask if he or she feels safe and comfortable with the presence of family members to discuss and share his or her disease and confidential information.

Group Therapy

To take clear oral or written consent from the patient and ask if he or she feels safe and comfortable with the presence of other group members to discuss and share his or her disease and confidential information.

Family Therapy

It is necessary to take a clear oral or written consent from the patient and family members and ascertain if the patient is comfortable with having family members in the meeting wherein confidential details of their illness maybe discussed.

Consultation Through Health Care Worker

The health care professional or worker can facilitate a telepsychiatric consul-

tation for a patient with a psychiatrist. The health care professional or worker should be qualified and designated from an organization for providing the telepsychiatric services. Health care professionals should take an explicit written or oral consent from the patients to take a history, examine the patient, and convey the findings to a psychiatrist.

Telepsychiatry and Consent During COVID-19 Pandemic

The restrictions imposed to control the pandemic helped to accelerate the uptake of telemedicine in India as elsewhere. It has also brought its own unique challenges. The use of telepsychiatry has predictably increased, not only for the outpatient consult but is also being employed for consultation and liaison with other medical specialties. China has used online platforms successfully for screening and treating mental disorders during COVID-19. Technology has been used to facilitate emergency mental health interventions while offering access to online psychological therapies such as cognitive-behavioral therapy and self-help programs.[27] In Karnataka, India, in places which are designated as COVID-19 treatment facilities, telemedicine modalities are being utilized to offer mental health care for needy people who are infected with SARS-CoV-2 and isolated. However, a pandemic should not preclude the consent process, and service providers need to respect the privacy and autonomy of the user and adhere to a good consenting procedure.

Unique Advantages, Challenges, and Legal Aspect of Telepsychiatry Consent

An ideal informed consent in a face to face or telepsychiatry setting requires an array of factors to come together. Informed consent has four essential elements—capacity, voluntariness, decision-making, and knowledge.[28,29] "Capacity" is the ability of the service user to understand the nature of the treatment, the consequences of the treatment, or not taking it. "Voluntariness" is the willingness to undergo the treatment or refusal of the treatment and is to be free of coercion. Coercion is the intentional overriding of one person's known preferences or actions by another person, where the person who overrides justifies the action by the goal of benefiting or avoiding harm to the person whose preferences or actions are overridden.[30,31] Coercion in telepsychiatry would be a new challenge for both service users and providers. Service providers must guard against using implicit or explicit coercive practices; they need to empower the user to make decisions that are in the best interest of the user. A study has shown that although most psychiatrists considered coercion as a caring, protective, and safe attitude, they did acknowledge its potential negative impact on patient dignity and therapeutic relationships.[32]

One way of empowering the user is by providing adequate knowledge about the treatment, procedure, or other related aspects. Knowledge includes sufficient information given to the patients to understand the nature and consequences of the treatment or the lack of it. It usually involves the nature of the proposed treatment, the risks and benefits of the proposed treatment, and the available alternatives. Decision-making means the ability to make decisions weighing the pros and cons and communicating the same to the treatment provider. A legally valid consent will involve all these factors.[6]

Teleconsent differs from traditional informed consent by removing the in-person and pen-to-paper signature components and instead has a video interaction between the participant and the provider followed by authentication via OTP or photo-based or handwritten e-signature or by clicking "Yes" in the online informed consent form. The teleconsent and other consent modalities are distinct. The standard for the consent process, which remains a face-to-face discussion with the patient, will be constrained by the need for travel on the part of the patient. Teleconsent procedure may require the participants to have access to a telephone, fax machine, or email, scanner, and a printer to be able to send and receive the consent form, which may not be available among rural and disadvantaged communities. This also overcomes the transportation and technological barriers by minimizing the requirements to a computer connected to the internet. In India, smartphone usage has been on the rise, and smartphones often replace the reliance on computers. The medium of teleconsult relies heavily on a good internet connection and often adds its challenges to the consenting process.

Another challenge during the teleconsultation process is the requirement for sustained attention from the patient, provider, or researcher. During a video conversation or when digitally sending the consent forms, one may argue that the participants may not be as cognitively attentive compared to the traditional face-to-face interaction between the two parties. This also makes the clinician job of confirming the extent of patients' understanding challenging.[33]

The telepsychiatry consultations offer the convenience of consulting the professional at their convenience. Another challenge is the privacy and confidentiality of the consultation; patients and clinicians may need time to get used to the software, which stores the information in the server. There is a chance of data leakage due to poor encryption of data in the server. There is the potential risk of patients bringing in the bias of convenience over the inherent weakness of teleconsult, to consent for the same. During the consenting process, the physician needs to explain the shortcomings, bearing in mind the patient's potential bias toward a teleconsult due to the inherent convenience. It is also important to ensure that the patient is sufficiently comfortable with the new medium before introducing the nuances of informed consent, even if this involves multiple sessions.

Future Directions and Way Forward

With further advancement in technology, in future consent process could partly be automatized with the help of AI chatbot. A chatbot is an artificial intelligent software application that can mimic a human conversation via text or text to speech methods. The component of providing adequate information about the nature, purpose, rationale of the teleconsultation

or a specific procedure, risks, and benefits of the same, reasonable alternatives, economic implications, and limitations could be done by AI, which gives all the relevant information to the user. It can perhaps even check if the user has understood the information and help with answering any questions regarding the same in an FAQ format. The AI program can direct the user to a human service provider if the user wishes to or has queries that the software is inept to handle.

Augmented reality (AR) and virtual reality (VR) are already being used in medical education and healthcare.[34] Similarly, AR and VR applications can be developed, which can provide enhanced user experience and improve the teleconsenting process. One of the major drawbacks of telepsychiatry consultation has been the loss of empathy; perhaps with VR technology, one can bring back the empathy component to the satisfaction of both the mental health user and the service provider.

Consent for procedures like electro-convulsive therapy (ECT) can be automatized, and the AI program can customize and provide information like the number and frequency of sessions to the individual user based on the available good practice guidelines and the latest evidence. Similarly, consent for capacity assessment and admission can also be automated. With the inclusion of AI chatbots and related technology into the consent process, especially admission, ECT, and starting specific medication, there could be a significant advantage by making it easy, thorough, and seamless. This has the potential not just to enhance user experience but prevent healthcare provider burnout. However, the client has to meet the service provider for the final consent agreement. The service provider may keep a signed hard copy of the consent form in the client record for recording and documenting purposes.

Conclusion

Telepsychiatry is a growing field, and the need to streamline the operational guidelines is much needed. The *Telepsychiatry Operational Guidelines* published recently is a step in the right direction. In telepsychiatry, consent holds an important aspect in the delivery of psychiatric services as it involves more non-human interfaces such as information and technology. The consent should not only be limited to telepsychiatry consultation services but also include the explicit consent about sharing of prescription to the pharmacy and sending a reminder for future consultation. There is also a need to work further on developing implementable record-keeping for teleconsults in line with the data protection laws of the land and compliance with the data safeguarding agencies. The streamlining of the telepsychiatry consenting process will safeguard both the treating team and the patient.

Declaration of Conflicting Interests

The authors declared the following potential conflicts of interest with respect to the research, authorship, and/or publication of this article:

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Telepsychiatry Netiquette: Connect, Communicate and Consult

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ABSTRACT

Globally, telepsychiatry has been around since the 1950s. It is in the COVID era that it has gained the relevance and much-needed momentum amongst mental health care professionals. Given the restrictions imposed by the global lockdown owing to the fear of contracting the virus, the ease of access and safety offered by telepsychiatry makes it both appealing and "the new normal." Despite some hesitation from mental health professionals, there is adequate research to support the role of telehealth services in the management of various mental health disorders. As with any formal system, the practice of telepsychiatry is regulated by professional guidelines to show the way forward to both health provider and seeker. The manuscript examines the ways telepsychiatry is redefining our virtual conduct. It emphasizes the evolving "netiquette" needed to navigate online consultations. It also elucidates the challenges faced by health professionals, and possible ways of maneuvering and circumventing the same. Telepsychiatry, a dynamic process which is interactive and personalized, adds a third dimension to the practice of modern medicine. It is here to stay. So, it is not a question of "if" instead "how soon" we can adapt to and get conversant with this revolutionary mode of connection, communication, and consultation, which will make all the difference.

Keywords: Mental health, netiquette, telemedicine, telepsychiatry, telecare

The blending of telecommunication and information technology into health care has given us the portmanteau words "telemedicine" and "telepsychiatry." Tele, the prefix phrase, derives from the Greek meaning "far." It is anchored to the root word that means "reaching over a distance, carried out between two remote points, performed or operating through electronic transmissions." The word "medicine" derives from the Latin "mederi," meaning "healing." Telemedicine refers to health care delivery, whereby physicians examine distant patients through the use of telecommunications technology.[1] "Telepsychiatry" holds a niche in the broader field of telemedicine. It is a complex set of tele-behavioral-health treatments. Hailey et al. (2008) reviewed 72 papers that described 65 clinical studies.[2] Findings from these studies confirm evidence of success with telepsychiatry in the areas of child psychiatry, depression, dementia, schizophrenia, suicide prevention, posttraumatic stress, panic disorders, substance abuse, eating disorders, and smoking prevention. The authors conclude that the evidence of benefits from telepsychiatry applications is encouraging, though still limited. A review of the abundant scientific literature supports the evidence that accumulating global experience in telepsychiatry consultation is positive and welcoming.[3]

In India, until early 2020, there was no specific legislation or guidelines on the practice of medicine through video, phone, and internet-based platforms. The Board of Governors, under the guidance of the Health Ministry, on March 25, 2020, formulated an amendment to the Indian Medical Council (professional conduct, etiquette, and ethics) Regulations, 2002 ("Code of Conduct"). It laid the regulatory foundation for the practice of telemedicine in India.[4] In May 2020, the National Institute of Mental Health and Neurosciences, Indian Psychiatric Society, and Telemedicine Society of India collaborated. They published an operational guideline for psychiatrists to practice teleconsultations in compliance with *Telemedicine Practice Guidelines* 2020 of the Government of India.[5]

The goals of mental health care professionals, the service providers, traditionally have always been to promote, prevent, diagnose, treat, and rehabilitate individuals needing care. However, in recent times it is the mental health care service seekers who are becoming more demanding in terms of interaction and participation than ever before.[6] They have never been more curious, interested, and responsible for their mental health. For the health seeker, the right to decide and deny remains paramount and the cornerstone of the current doctor–patient relationship.[7] Health care seekers are looking beyond just medical care. They want the power, autonomy, and dignity related to their health, most notable being a possibility to refuse. These challenges, combined with the increasing need for a collaborative relationship between the professional and patient, have given telepsychiatry wings to fly and play a pivotal role in health care delivery.

The ubiquitous caveats of etiquette that apply to online communication are similar yet different from those employed for communicating offline, in person, or through audio and video. A telepsychiatry consultation, contrary to the face to face (f2f) consultation, begins much before the actual meeting. The portrayal of the professional in terms of affiliations and credentials, the multitude of services offered can influence health seekers' perception in positive and negative ways. Prospective health care seekers may browse internet portals for physician ratings and reviews before opting for their choice. It sets the precedence to getting the first impression of the health care provider. Many times, these sites use arbitrary methods and are not regulated, thereby significantly influencing health seekers' attitudes and beliefs.[8] Ergo, the need to upskill oneself for a hassle-free transition from bedside to website. The objective of this manuscript is to appraise the evolving "netiquette" required for online consultations. It also highlights the challenges to circumvent in the process.

Professional Upskilling for Bedside to Website Transition: Netiquette of a Telepsychiatry Consultation

The key to successful teleconsultation is not just the technology, it is also the delivery of care. There are potential prerequisites from both ends for a fruitful consultation. The technology serves the purpose of a means to an end. A productive telepsychiatry consultation is dependent on multiple parameters. It includes doctor–patient relationship, patient and professional requirements, technological requirements, the comfort of using technology, positive expectation from the mode of communication, and essential trust in the method of distance communication. Etiquette in technology is a relatively modern concept. "Netiquette" is a portmanteau, word blend of "network" and "etiquette."

Creating the "Just Right" Netiquette Using the Goldilocks Principle

One can decipher the right netiquette using a metaphor. Here is an excerpt from the fairy tale "Goldilocks and the Three Bears." The story where a tired little girl named Goldilocks enters the house of bears; her attention soon falls on the three beds. The first bed that she tries to fall asleep on is too firm, the second too gentle, and the third just right for her. That's the beginning of the conflict in the story.

Goldilocks principle is a cognitive effect where similar choices tend to gravitate toward the more moderate option. Setting the telepsychiatry netiquette standards too high (too firm) to meet the studio norms can have a toll on the service provider. The consequent strain can interfere with providing optimum mental health care, while keeping the netiquette standards too low (too gentle) can affect the satisfaction levels of the service users, which may lead to a decrease in the utilization of the service. Hence, there lies the importance of the "just right" netiquette that is simple and straightforward to follow. It will impact the outcome of the effectiveness of the teleconsultation. With heightened awareness and practice, the service provider and service seeker can join together in optimum utilization of telepsychiatry service.

Capsuled, in a nutshell, the 13 "just right" netiquettes include the following:

1. Perform a trial run to ensure familiarity and use of the technology

in hand. It will aid in minimizing technical challenges that can arise during the consultation. It is useful to have an audio/video quality control check in advance to every single session. Have alternative platforms or technology as a standby. It can aid in combating untoward glitches that can crop up during the consultation.

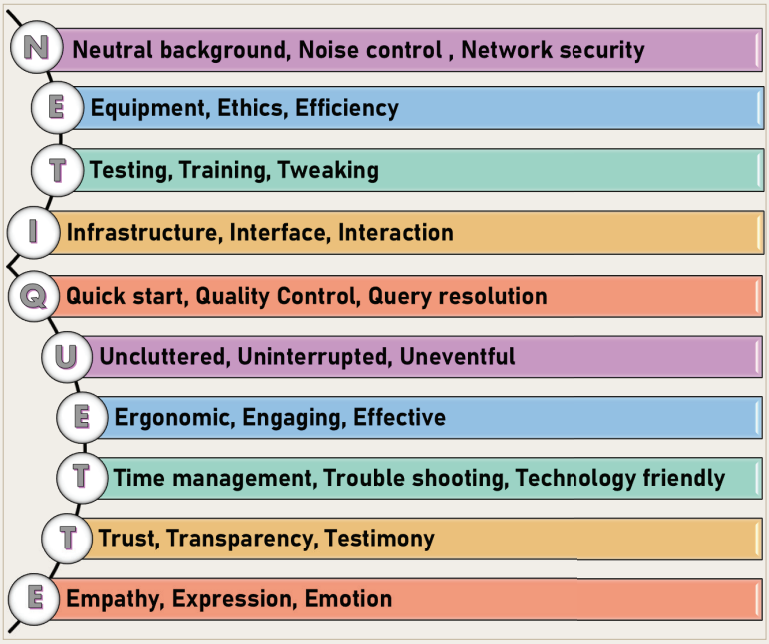
2. For teleconsultations, scientific evidence mulls the usage of a neutral background. It allows the optimum viewing of individuals with varied complexions.
3. Deploy and utilize standard quality equipment, latest software, and faster and consistent internet service. It shall ensure optimum audio and video quality.
4. Schedule a time in advance. Fixing the duration of the teleconsultation and making oneself available at that time ensures effective processing of the consultation.
5. Proactively communicate untoward delays and unavoidable cancellations. Ensure to reschedule again on a mutually convenient day and time. Being proactive is an opportunity to win. Active practices and communications create opportunities to demonstrate stakeholder attention, establish trust, and build connections. It can ease anxiety and aid in addressing problems before they develop.
6. Talking about a mental health issue can be nerve-wracking, uncomfortable, and embarrassing. Ensure the remote setting is safe, secure, and confidential as on the lines of a f2f session. It will enable the patient to feel comfortable and trustworthy to seek health care services.
7. Make sure the room is well lit. Conversations are more active and less anonymous in a brightly lit room. Have space devoid of distractions, both people and noise. Keep the background nonclumsy. A simple, clean, and nondistracting background with proper camera positioning will foster an environment that allows an uninhibited flow of information without compromising privacy. It is essential to be in control of what is seen, told, and experienced during the consultation.
8. Ensure to attire professionally always irrespective of the duration or mode of consultation. It can influence the perceived professionalism. Colors, designs, and patterns have their connotations, which can have a significant influence on people's impressions and behaviors. Physician's appeal plays an integral part in establishing faith and confidence as well as in perceiving empathy in the relationship between patient and doctor.[9]
9. Always have the health care seeker to dial in. It serves as implied consent with themselves opting to reach out to seek professional help. On beginning the consultation, place a warm request to the patient to confirm their identity. It will make sure that the right patient is receiving the consultation.
10. Communicating online has subtle differences from talking f2f. Establish the following ground rules in advance to ensure a productive and effective online consultation:
    a. Paralinguistic features like gesture and facial expression are absent. They help in communication and intonation patterns to convey the tone of a message. Hence, judiciously use nonverbal cues to show interest, and that you are listening to and understanding the other person. Acknowledge and respect others' points of view (even if you disagree). Be tolerant and forgiving of others' mistakes.
    b. Set clear boundaries and respect those set by others. Communicate, taking turns. Avoid stepping on each other feet by not having simultaneous talks. Be unambiguous, slow, precise, and pleasantly loud.
    c. Make an ongoing effort to face the camera while communicating. Maintain eye contact and practice "civil inattention" where necessary. Coined by sociologist Erving Goffman,[10] this is the act of consciously acknowledging other's presence. It can have one's privacy uninvaded by making eye contact for a fraction of a second before averting the attention.
    d. Be supportive. Reassure and always make it a point to clarify specific questions raised. Regularly check to have been understood by asking questions or making mini summaries.
11. Evidence-based research indicates the presence of unique vocal patterns associated with the underlying emotions of anger, disgust, fear, happiness, sadness. In a telepsychiatric consultation process, with the limitation of being able to notice the finer nuances of emotional digressions, it is desirable to develop the ability to detect the subtle emotions in the tone. It can help the service provider to invest a little more time and be more compassionate to the anxious patient—thus influencing and motivating the individual to share more details for better care of the issue in hand.
12. Be thoughtful to use the chat box, primarily to communicate misunderstood terms or for reclarification of an indistinct converse. Use texts with emojis when appropriate for better empathy and communication. Nevertheless, be cautious and capture the context to avoid miscommunication.
13. Termination of the session with a thank you note is essential. It is usually much appreciated and goes a long way toward having a positive effect on patient satisfaction.

Mirroring of optimal postures by the health care provider and health care seeker can enhance rapport building. A well-established rapport leads one to feel comfortable in one other's presence, thereby leading to accurate disclosure of information. Following are three good practices intended to supplement the mentioned 13 netiquette:

1. Set up an ergonomic consultation station as this will help one feel and give their best. Let the curve of the spine decide the choice of the chair. Rest both feet on the floor or footrest. Let the keypad be in level with or below the elbows. Elevate the laptop to ensure the camera on the screen is at eye distance.
2. Do not multitask as this could subsequently lead to multi-slacking. Be mindful of the session and avoid an-

FIGURE 1.

Telepsychiatry Netiquette Simplified



swering other emails or run errands online while still being in the meeting.

3. Turn off the notifications on the phone and stop social media for blocks of time with an app such as Self Control, available on either phone or desktop. Make the best out of the available online time tracking apps such as Toggl (web), the Work Break Timer (app), Focus Booster (app and web), or Tomato Timer (web) for efficient time-keeping.

Figure 1 illustrates netiquette as a mnemonic to provide a concise three-part framework crafted for a quick recall.

A conversation on mental health is more than mere communication. It requires the establishment of rapport, trust, therapeutic alliance, and positive expectation for optimum outcomes. With virtual consultation, the overall ability to express, deal, label, and process emotions remain a challenge. Hence, for a professional, working on active learning of communication with texts, messages, voice, and video is an advantage. Here are some challenges to be mindful of for an audio-only and text consultation.

Audio-Only Consultation

Audio conversations without an accompanying video can be challenging. Any form of communication consists of visual and aural components, former playing a more substantial part. The elimination of the visual element forces the listener to "fill in" the gaps. This "filling in" occurs by judging the intonations and inflections of the aural component. It makes the process inherently imperfect and thereby likely to result in "lost in translation." It further leads to challenges in communication.

Text Messaging

It is a frequently used and very convenient way to exchange information. With a loss of visual and aural components, there is an offset in the clarity provided by the written testament of information. In combination with audio-video messaging, the level of clarity gained is probably at its highest. We must be aware of spelling errors, faulty grammar, and poor language skills, not ignoring the frustration caused by automatic spellchecks that autocorrect words arbitrarily and generate amusing and often disastrous instances often referred to as "word salad."

Shielding Netiquette Standards Against Becoming too Firm or too Gentle

Professional consultation involves primarily human interaction; hence, it can go awry due to various reasons. Telepsychiatry, with its unique features and demands, is also prone to specific challenges. A nonprofessional setup, appearance, or handling of technology can have a significant impact on the outcome of the consultation. The individual's sensory, motor, communication, and cognitive deficits can restrict the usage of virtual consultation. Thus, it is a good practice to assess user feasibility beforehand to choose the best mode of communication.

Text, audio and video only convey minimal data. Teleconsultation, therefore, has the downside of unintentional miscommunication. Establishing and maintaining trust remains a crucial component for a fruitful telepsychiatry consultation. Real-time consultation has a clear boundary to mark the end of consultation when the patient walks out of the consulting chamber. Telepsychiatry consultation has the ease of accessibility through instant messages or call. Hence, one of the challenges to note is that the patient can continue to reach out multiple times after the completion of a scheduled appointment to clarify or share more information. It may result in resentment which may impair the effectiveness of telepsychiatric session(s). Also, patient behaviors can turn out challenging during a telepsychiatry consultation. Some of the problems include self-harm, suicidal behavior, abuse, addiction, and disinhibition. Professionals, therefore, need to develop their basic strategies in advance to deal with the challenging online behavior of their patients. Also, ensure that there is no compromise on ethics and legality. A comprehensive consent form detailing the do's, don'ts, expectations, and limitations from the telepsychiatry consultation duly explained, discussed, and accepted in prior shall be useful during times of crisis. It may be helpful to obtain personal demographic information, alternative numbers of trusted family members or friends, particularly when working with people who are at an imminent risk of suicide or self-harm. Having a list of local resources for emergency care hotlines and other crisis intervention setups could be handy.

Telemedicine guidelines recommend that the professional decide on the feasibility of initiating and continuing con-

sultation. At any point in time, the expert can consider termination and recommend in-person consultation for reasons of safety and effective care to the patient. Keep a list of alternative resources to make available to the patient. It will enable to provide first aid to the patient until they connect to the required service.

The remote and virtual presence of the patient rules the need to collect data and the constant interaction with technology. It can make the practitioner less empathetic and more protocol driven, which can dilute the human aspect of the consultation. With power comes responsibility! Telepsychiatry consultation is never a more natural alternative, but rather another mode of health care service delivery, suitable in certain circumstances.

Technical glitches at either end of service provider or receiver shall create obstacles for the overall effectiveness of the consultation. Being prepared and having alternative strategies shall remain key to handling these glitches, which could be inevitable. Teleconsultation sessions can continue to influence interpersonal interactions. There is now ease of access to one's personal and social life on multiple platforms. There are digital traces left behind. Implicit biases can contribute to questions of transference and countertransference. To know the real impact, this area requires systematic studies. Avoid abuse and reduce bias, against any modality of care. Balancing different patterns of health care available for the benefit of the community at large shall remain the key.

Conclusion

Telepsychiatry is an evolving form of health care service. It holds on to the basic principles of autonomy, beneficence, confidentiality, nonmaleficence, and equality. Telepsychiatry advances are an indication of a changing and adapting world, needing us to embrace the change and uncertainty. It has its potential effectiveness, possible limitations, and its place in the health care ecosystem with no compromise in confidentiality, ethics, and legality. A commonly held belief among health professionals is that there is no replacement or equivalent to in-person consultation, which need not be true always. The in-person consultation has its drawbacks as well. The lack of training, experience, and exposure to virtual consultation leads to further barriers in many professionals delaying the adoption of telepsychiatry consultation.

Telepsychiatry has the potential to be a convenient, customizable tool to bridge the gaps in the existing mental health care ecosystem. It can benefit all the stakeholders in the ecosystem, thereby helping nations to create robust health care. With more and more consultations going the telepsychiatry way, the data generated shall provide the fodder for future changes and incorporations. The process of telepsychiatry consultation is not an all-or-nothing affair, where one becomes an expert immediately starting to the consultation online, like turning on a light switch or vice versa. Instead, it is a gradual and incremental expertise one acquires like the dimmer switch, albeit slow and steady that dims or brightens the space.

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Telepsychiatry and Outpatient Department Services

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ABSTRACT

The utilization of telemedicine and telepsychiatry (TP) services in the outpatient department (OPD) has been increasing in recent years. The information about the technological, administrative, and clinical challenges is being addressed by the telemedicine and TP guidelines published by several individual nations. TP aims to address the treatment gaps, barriers for utilization, accessibility, diagnostic validity, financial implications, and individual client preferences. Utilization of TP in the OPD varies from country to country depending upon their healthcare delivery systems. It also varies in populations utilizing the TP services—urban, rural, child and adolescent, geriatric, and differently abled. TP services in the OPDs are being incorporated differentially by government organizations, insurance recognized psychiatric healthcare organizations, private psychiatric group practice deliverers, and individual, standalone psychiatric healthcare deliverers. TP may not replace the traditional in-person consultations completely. Covid-19 pandemic has hastened its utilization across several healthcare delivery systems. Healthcare organizations, clinicians, other healthcare deliverers, and end users are in the process of adapting to the new scenario. Incorporation of the big data, machine learning, artificial intelligence, virtual reality, and other technological advances in the psychiatric healthcare delivery systems into TP services in the OPDs would significantly contribute to the overall quality and efficacy of the psychiatric healthcare delivery systems in the future.

Keywords: Telemedicine, telepsychiatry, outpatient services, Covid 19

Telemedicine was coined to define the medical care practice using interactive audio, visual, and communications systems.[1] Telepsychiatry uses the information and communication technologies to provide psychiatric healthcare services. Technologies including closed circuit television, two-way television,[2,3] and use of telephone[4] have been in use in psychiatric healthcare for more than 50 years. Technological advances over the past 20 or more years have ushered a new era into psychiatric healthcare delivery systems. These advanced technologies are enabling the psychiatric healthcare professionals to render their expert services to rural, remote, neglected areas, and underserved population groups too. In India, the Schizophrenia Research Foundation (SCARF), Chennai, pioneered telepsychiatry services during the 2004 Tsunami by reaching out to the distant and rural areas.[5] National Institute of Mental health and Neurosciences (NIMHANS), India has initiated telepsychiatry services with a hub and a spoke model to fulfill the psychiatric healthcare service requirements of the distant and rural population in Karnataka State, India.[6]

Telemedicine and Telepsychiatry Practice and Operational Guidelines

The regulatory, technological, administrative, legal, and clinical challenges are being addressed by the telemedicine guidelines published over the past several years by several individual nations including UK,[7,8] Australia & New Zealand,[9] and USA.[10] In India, Ministry of Health and Family Welfare (MoHFW), has released Telemedicine Guidelines on March 25, 2020.[11] Indian Psychiatric Society and Telemedicine Society of India in collaboration with NIMHANS has published Telepsychiatry Operational Guidelines in May 2020.[12] The guidelines ensure the psychiatry healthcare delivery organizations and psychiatric professionals to provide telepsychiatry outpatient department (OPD) services the equivalent standard of care as in-person care.

Treatment Gap

According to the World Health Organization (WHO),[13] nearly 25% of the world population will be affected by mental or neurological disorders at some point in their lives. Around 450 million people currently suffer from such conditions, placing psychiatric disorders among the leading causes of ill health and disability worldwide. Though the treatments are available, nearly 66% of those with known psychiatric disorders rarely seek the required treatment from a psychiatric professional.[13]

The impact and cost of psychiatric illnesses on personal, family, social, societal, individual finances, and overall economy of the nation are enormous, yet there is a significant gap in the delivery of psychiatric healthcare services. The global average treatment gap 31.1% for schizophrenia and related disorders, 53.9% for major depressive disorders, 48.9% for bipolar disorders, and 76.2% for alcohol dependence and abuse disorders.[14] In India, there was a 85% treatment gap for common mental disorders, 73.6% for severe mental disorders, 90% for substance use disorders, 80% for suicidal risk behavior, and 83% for the overall treatment gap, according to National Mental Health Survey 2015-2016.[15] Apart from the huge treatment gap, India has also abysmally low psychiatric healthcare professionals per 100,000 population who are more concentrated in urban areas.[16] This skewed distribution of psychiatric healthcare services adds to this treatment gap, making it imperative to incorporate novel approaches to the delivery of psychiatric healthcare services. Technological advancements, ease of accessibility, cost-effectiveness, and overall equivalent efficacy would enable the telepsychiatry services in the OPD to address the enormous treatment gap and be a

permanent component of the psychiatric healthcare delivery systems.

Benefits of Telepsychiatry

1. **Reliability:** There are numerous accumulated literature to indicate the reliability of videoconferencing-based telepsychiatry diagnostic assessments and comparability of clinical outcomes of telepsychiatry interventions to in-person care among varied client populations,[17,18] ages,[19–21] and diagnostic groups on a variety of measures.[22] Reliability of child assessments,[23] neuropsychological assessments,[24–27] severity of depressive disorder,[28,29] alcohol use severity,[30] diagnostic accuracy,[31,32] competency to stand trial,[33] psychosis,[34] and adult autism.[35]
2. **Cost-effectiveness:** Telepsychiatry was found to be more cost-effective than in-person services in the management of pain and depression[36] and underserved rural populations.[37] In a study in India, the telepsychiatry services delivered from a tertiary psychiatric center to a distant primary healthcare center has shown to be very cost-effective than conventional in-person care.[38]
3. **Provider and client satisfaction:** High level of client satisfaction was found in adults with depressive illness[39] and children with depressive illness.[40] There is increased satisfaction with videoconferencing across cultural differences.[41] The videoconferencing services were appreciated and acceptable in the family members of those with child and adolescents who have psychiatric illnesses.[42]
4. **Outcomes**
   a. **Telepsychiatry in various psychiatric illnesses:** Telepsychiatry consultation and treatment has been shown to be effective in clients with anorexia nervosa[43] and bulimia nervosa.[44] Telepsychiatry-based Cognitive Behavior Therapy (CBT) is found effective for panic disorder,[45] social anxiety disorder,[46] depressive disorders,[47] PTSD[48] and substance abuse disorders,[49,50] schizophrenia[51–53], suicide assessments,[54] suicide prevention,[55] and obsessive compulsive disorder.[56]
   b. **Telepsychiatry in underserved population:** Telepsychiatry studies in persons with intellectual disability have shown some evidence of cost-effectiveness, improvement in client–carer satisfaction, and convenience.[57] Videoconferencing services in children and adolescents are equivalent to in-person services in diagnosis, satisfaction, clinical outcomes, time and cost savings, and overall improvement in quality of care.[58] Videoconferencing is effective in imparting training skills to parents of children with attention deficit hyperkinetic disorder.[59]
   c. **Telepsychiatry in restricted access population:** Videoconferencing services increase the access of psychiatric health services in prison inmates, leading to high satisfaction among them, and saving costs for providers.[60–63] Telepsychiatry is acceptable, effective, feasible, and above all reliable across cultures like American-Indian veterans and hispanic communities.[64–68] Videoconferencing-based assessments of mental state and cognitive function have shown to be as reliable as face-to-face interviews in elderly clients, even in those with cognitive Impairment.[69–71]
   d. **Telepsychiatry in underserved areas:** Telepsychiatry was primarily devised to bridge the unmet psychiatric healthcare needs of users in remote,[72,73] rural and difficult to access locations.[74–76] The telepsychiatry services extended to urban areas too with increasing traffic, commuting distances, costs of travel, saving time, etc. and thereby decreasing healthcare costs and accessibility to high-quality care.[77]

Barriers to Implementation of Telepsychiatry

The scope of telepsychiatry is enormous, and its potential appears to be underexplored and underutilized. Hence, it has not been implemented to its full potential and extent. Though the clients and providers have shown satisfaction with telepsychiatry, concerns such as establishing rapport, privacy, safety, technology limitations, infrastructure, financial, regulatory, legal, license, credentialing, educational, and learning issues have created barriers.[78]

Challenges from provider's perspective:

1. **Institutional**: Large and complex psychiatric care institutions may not provide appropriate technology, technical support, timely evidence-based information, and adequate medical records to the providers leading to time constraints when integrating this information into clinical practice.[79,80] Studies have found that after controlling for other barriers, reimbursement, regulatory issues, negative attitudes of practitioners, and implementing institutions are the most prominent barriers influencing the use of telepsychiatry services.[81]
2. **Licensure**: Licensure issues arising from cross border and across states can be addressed by a national licensing system within a country with appropriate permissions and laws.
3. **Infrastructure**: Telepsychiatry involves investment associated with infrastructure development, maintenance, upgradation of technology and devices, technical challenges, regular on rolls nonmedical personnel, and skills training. In larger institutes, these can be a challenge with bureaucracy and timely implementation.
4. **Client privacy and security**: Privacy issues related specifically to telepsychiatry include the possibility of access of medical information to the nonmedical staff. Videoconferencing over public networks creates the potential for unauthorized access to protected medical information. Regular upgradation of technological solutions such as encryption and virtual private networks, precautions in data storage, and retrieval are challenges that need to be addressed adequately. There are several medicolegal and ethical issues related to maintaining client privacy, confidentiality, and security of the health data.[81]

Challenges from end user and patients' perspective:

1. **Age and disability-related challenges**: Telepsychiatry is a challenge in children and elderly patients and in those who have decreased mobility,

complex social requirements, hearing and vision difficulties, and cognitive impairment. Learning disabilities and level of education in patients also pose a challenge. Assistance from a third person raises further issues in use of the systems.

2. **Internet quality issues**: Decreased speed of net connectivity will result in poor video and audio quality during consultation. Poor signal from the wireless and 3G networks that can be affected by the home interior and the weather conditions.
3. **New technology issues**: Difficulty navigating or installing the system on their computer or smartphones, lack of knowledge, unfamiliarity with communication systems, and some unperceived fears could lead to the reluctance to use the technology. Incompatibility of newer technology on old operating systems would be a concern too.
4. **Training and familiarity**: Insufficient and lack of training and knowledge about the technology and familiarity to ever changing technology would be a barrier too.
5. **Privacy and confidentiality**: If the telepsychiatry platforms are not Health Insurance Portability and Accountability Act (HIPAA) compliant, they would definitely be a matter of concern for the patients' privacy and confidentiality. Online consultation from homes can be irksome and matter of distress to those clients who have not disclosed their health condition to their family and if the information is overheard by their family members at home.
6. **Location issues**: Lack of an assigned room for online consultation, overall home layout, distractions from the neighboring home environment, disturbance by other family members who could be doing other home tasks, such as washing, cleaning, cooking, watching television, answering doorbells, and general conversations among family members can affect the quality of telepsychiatry consultations.[82]
7. **Socioeconomic status and gender:** Inability to afford smartphones and other communication devices may be an issue with some clients and the ease of their use may vary with gender.[83]

Modes of Telepsychiatry

Two modes of delivering telepsychiatry have been described.[84]

Synchronous Telemedicine "provides live, two-way interactive transmission between client and provider at distant locations via telephone, online live chats and videoconferencing."

Asynchronous Telemedicine "involves transmitting the medical records and clinical information in the form of data, audio, video clips, or recordings via E-mail or Web applications for review by a specialist."[85]

In synchronous telepsychiatry, data are sent without any gaps in transmission and its use is advantageous for instantaneous and live accessibility of experts for all areas where telecommunications have been serviced with latest technology including 4G and 5G in future with adequate bandwidth and speed.[86] It is expensive to establish the latest technology in telecommunications especially in bigger governmental institutes, large private organizations, rural, remote, and inaccessible areas.[87]

In asynchronous telepsychiatry, since medical records, clinical information, and laboratory reports are sent as attachments, not much change is required in the existing infrastructure and technology. Compared to synchronous, asynchronous costs are less.[88,89]

Covid-19 Pandemic and the Current Scenario

As of second week of August 2020, there are 23 million cases of Covid-19 worldwide and USA, Brazil, and India account for 50% of the cases.[90] During the past several months, the Covid-19 pandemic has brought widespread changes in psychiatric healthcare delivery, especially the transition to telepsychiatry services.[91] Globally, healthcare systems, psychiatric organizations, and individual practitioners are rapidly virtualizing their telepsychiatry operations. These activities have included the extensive use of videoconferencing, either expanding or initiating direct practitioner-home to client-home services, and partially or fully virtualizing administrative operations too. Implementation has occurred at a pace never experienced in telepsychiatry, with many large organizations fully virtualizing in a matter of days. Rapid virtualization has shown that practitioners, clients, organizations, and systems can rapidly adapt to telepsychiatry, although not without challenges. Technical and administrative innovations have motivated the practitioners and organizations to configure telepsychiatry to current clinical needs and environments.[92] Telepsychiatry services are being implemented across various psychiatric healthcare organizations in private, government, insurance, urban, rural, academic, and educational and research sectors in a varied way.

In India too, restriction of the movement during lockdowns and the fear of infection of Covid-19 have led to the initiation and expansion of the telecommunication (telemedicine/telepsychiatry) services, in about one-fourth of the government and private medical institutes. Absence of routine OPD services, avoidance of in-person contact, the convenience of use, and recent telemedicine guidelines from the Government of India has fueled its growth. Furthermore, these services are also being used for providing psychiatric services to the people in quarantine and those with Covid-19 infection. Expansion of these services has possibly brought some respite to the needy clients and their family members.[93]

According to the Telecom regulatory authority of India press release report 2020, as of April 30, 2020, there are 1169.44 million telephone subscribers and 676.14 broadband users in India.[94] There is a huge potential to cover the entire population, and telepsychiatry services are grossly underutilized.

In the past 3 years, at NIMHANS, India, the Telepsychiatry After Care Clinics provided 780 teleconsultations for 232 clients with various psychiatric disorders.[95] During the Covid-19 pandemic, these services are being reorganized, upgraded, and enhanced for greater reach. Many governmental organizations have to cross the decision-making processes in bureaucracy, infrastructural, and organizational hurdles in order to implement

and realize the full potential of telepsychiatry quickly despite the advent of Covid-19 pandemic.

In the private sector, large corporate hospitals were quick in incorporating telepsychiatry models as a part of their whole telemedicine initiative. Availability of resources and quick decision-making process have enabled these private organizations to incorporate all modalities of telemedicine and telepsychiatry into their already existing telemedicine software.

Private group practice and standalone practitioners lagged behind in implementing telepsychiatry due to issues related to regulations, change of technology, payment gateway, upgradation of existing facilities, communication devices, and scheduling of appointments. Once these hurdles were resolved to a greater extent, most of them have adopted telepsychiatry into their OPDs.

Many start-ups and private firms have joined the bandwagon of providing efficient platforms for telepsychiatry both asynchronous and synchronous—audio and videoconferencing with clients in OPDs. These start-ups are already providing Telemedicine services of about more than 100 million consultations per year in India.[96] The clients pay their consultation virtually and have a real-time consultation. The business opportunities of the telemedicine industry would create more than $5.4 billion by 2025.[96] The practitioners or the healthcare organizations subscribe to these platforms on monthly or yearly basis.

The release of Telemedicine Practice Guidelines by MoHFW, Government of India[97] on March 25, 2020 came at the right time when the Covid-19 pandemic was on the rise and OPD practices were closed due to lockdowns, and there were restrictions of travel and movement. Some of the highlights of the guidelines pertaining to the OPD practice are as follows:

1. The choice of consulting through telemedicine depends on the willingness, consent, appropriateness, and adequacy on part of both the clinician and the client.
2. The physician can prescribe medicines through telemedicine with appropriate diagnosis/provisional diagnosis as a part of the professional conduct.
3. The practice guidelines enlist medications for common conditions that can be prescribed for first consultation by any mode (list O). List A includes relatively safe medications with less potential for abuse, such as antipsychotics, mood stabilizers, antidepressants, phenobarbitone, clobazam, and clonazepam that can be prescribed after the first video consultation. List B includes drugs such as benzodiazepines that can be prescribed in the first video teleconsultation after in-person consultation in the past 6 months or follow-up video consultation. Prohibited medications listed in the Narcotic Drugs and Psychotropic Substances, Act, 1985 and Schedule X of Drug and Cosmetic Act, 1940 cannot be prescribed through telemedicine.[98,99]
4. Practitioners using the telemedicine are required to maintain the similar professional and ethical norms as applicable to in-person care including care of privacy, confidentiality, and data protection.[99]

Process of Adoption of Telepsychiatry in the OPD

At first all patients who have appointments in the near future need to be informed over phone or sms by the staff of the availability of telepsychiatry services. Appointments need to be rescheduled as per the choice of the clients. Adequate time need to be divided between in-person and telepsychiatry services. Confirmed appointment timings have to be communicated appropriately on to the provider as well as the clients. Confirmed virtual visits must be noted in the patient's electronic medical record (EMR), such that the clinicians could appropriately schedule their time. Telepsychiatry training videos and reading materials must be made available to all staff. A qualified technical point person must be assigned to provide software, hardware, and IT support. During the process of change, interruptions, missed or late appointments, timings miscalculations, and even cancelled appointments could be experienced. For patients without access to a smartphone, computer, laptop or tablet or webcam, and regular phone calls could be substituted for videoconferencing. Clients and providers may encounter difficulties in using telepsychiatry software on personal computers, laptops, or tablets. All telepsychiatry software programs must be HIPAA compliant. Converting to telepsychiatry may appear difficult or challenging initially, but is feasible and can be executed without disrupting the regular patient care. In fact, UC, Davis Psychiatry Clinic has rapidly converted its regular services into Virtual Clinic within a week in the month of March 2020.[100]

Telepsychiatry for clients can significantly reduce absenteeism from work, traveling time, costs, queues, and exhaustive waiting times for in-person consultations as it enables the clients to consult their practitioners with a prior appointment.[101,102] It can also decrease costs of establishment, staffing, traveling time, and overall healthcare delivery costs to the providers and organizations too.[103] Short-term follow-up studies have been encouraging towards implementation of telepsychiatry in OPD in better management of the illnesses and better quality of life. Long-term follow-up findings of research are still awaited. With the advent of smartphones, the psychiatric healthcare providers became even more accessible to the potential clients. From the privacy of their homes, telepsychiatry is overcoming stigma and noncompliance. Telepsychiatry provides choice for the clients to seek consultation across borders and expert second opinions too.[104]

Future of Telepsychiatry

Apart from greater utilization of telepsychiatry services across varied population and regions, technological advancements in the health sector may play a great role in delivering quality psychiatric care to the clients. Virtual Reality Machine Learning (VRML) describes 3-D images and scenery on the Web. VRML would be the key technology shaping the future of the telepsychiatry.[105] Virtual Reality adaptable devices and technology are already making inroads as supplementary treatment modalities in various psychiatric disorder like phobias, anxiety disorders, depressive disorders, ADHD, and even autistic spectrum disorders.[106] These technologies

would be integrated into telepsychiatry for enhanced psychiatric care delivery.

Artificial intelligence and machine learning utilize the big data collected from various modalities including medical records, wearables, and monitoring devices from the clients and analyze the data using algorithms. This information could revolutionize telepsychiatry in providing precise and personalized psychiatric care to the clients.[107]

Conclusion

Telepsychiatry in the OPD is now a mandatory modality as one of the services provided by the psychiatric health providers across the spectrum. The utilization of telepsychiatry in the out patients varies from zero in some parts of the world to nearly 95% across different regions of the world with the advent of the Covid-19 pandemic. Overall most of the evidence points to the beneficial aspects of telepsychiatry across various disorders, populations, and regions. Telepsychiatry provides greater end user satisfaction, ease of accessibility, costs, reliability, and validity on par with face-to-face consultations. Sometimes, telepsychiatry may be the only available modality of psychiatric care especially in rural, remote, and inaccessible areas of a country. Telepsychiatry services in the OPDs would significantly contribute to the overall quality and efficacy of the psychiatric healthcare delivery systems in the future too.

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A Review of Models and Efficacy of Telepsychiatry for Inpatient Service Delivery: Proposing a Model for Indian Settings

Abhishek Ghosh[1], Meha Verma[1], Shalini Lal[2,3,4]

ABSTRACT

Background: The use of telepsychiatry (TP) for inpatient service delivery is still an emerging field and there is limited literature on its practice and evidence. This review was conducted with the objectives of (a) exploring the models of TP for inpatient service delivery, (b) qualitative synthesis of the efficacy of TP in inpatient settings, and (c) proposing a best-fit model of TP-based inpatient care for Indian settings.

Methods: An electronic database search was conducted on July 22, 2020, in PubMed, Directory of Open Access Journals, and Google Scholar for relevant articles. Seventeen articles were included in the review.

Results: The review revealed three models for TP-based inpatient care; direct care model, teleconsultation model, and the collaborative care model. Preliminary evidence suggests that TP is cost-effective and reliable, and that patients and service providers are highly satisfied with this approach. Evidence gaps were seen for some diagnostic categories such as psychosis and for extremes of age groups. Based on the existing models, we propose an Indian model for implementing TP in inpatient settings.

Conclusion: Promising initial results and the evidence gaps highlight the need for further research in this area.

Keywords: Distance education/telecommunication, health services research, literature reviews, telemedicine/telecare

Key Messages: Telepsychiatry services can be provided to remote rural hospitals and medico-surgical wards. The direct care model can also substitute temporary absence of psychiatrist. Telepsychiatry-based inpatient care is cost-effective and reliable.

The National Library of Medicine has defined telemedicine as the use of electronic communication and information technologies to provide or support clinical care at a distance.[1] The WHO's definition includes preventive services and research as well.[2] Telemedicine, when applied to psychiatric care, is telepsychiatry (TP). TP can be synchronous (consisting of live, two-way interactive communication between patient and provider at distant locations) or asynchronous (involving storing of clinical information in multiple formats such as audio, video, email, or web applications for later access by patient and provider). None of these definitions or modalities specify the treatment settings.

Nevertheless, TP has been extensively practiced and researched in the context of outpatient care.[3,4] The scarcity of available literature regarding inpatient TP care is evident in reviews and meta-analysis. For example, a recent review paper on TP outcomes included 134 articles, of which only two focused on the inpatient delivery of TP services.[5] Inpatient TP care could significantly expand the scope of TP. The use of TP in inpatient settings has become particularly relevant during the COVID-19 pandemic. In this article, we reviewed the available literature regarding TP services in inpatient settings. The objectives of the review are to (a) conduct a qualitative exploration of TP models implemented in inpatient settings, (b) provide a qualitative synthesis of the efficacy of TP in inpatient settings, and (c) propose a best-fit model for TP-based inpatient care in the Indian context.

Search Strategy

Using the following search words: telepsychiatry OR "telepsychiatry" OR "videoconferencing" OR "Telemental health" OR "Tele-mental health" OR "Videoconferencing" AND "Psychiatry" OR "Mental health" AND "Inpatient," we carried out an electronic database search on July 22, 2020, in PubMed, Directory of Open Access Journals (DOAJ), and Google Scholar (without including any limitations on time). This retrieved 28 articles in total, out of which 11 were excluded given that 10 of these dealt with "inpatient care planning" or "alternatives of inpatient care" or "reduction in number of inpatient cases" or "nursing home residents," and one article was not available. No meta-analysis or reviews were found specifically addressing TP service in inpatient settings.

Models of Telepsychiatry for Inpatient Care

TP models for outpatient and community populations have been adapted for inpatient service delivery. These models can be, specifically, categorized as follows: direct care model, teleconsultation, and collaborative/integrated care. Most of these models involve multidisciplinary team-based care. In a few of the studies, these models have been coupled with a "stepped-care approach." The target populations are patients admitted in rural psychiatry hospitals, psychiatry units for special populations, consultation–liaison (CL) with medical or surgical units, and in an emergency area waiting for admission to inpatient care.[6–23]

Collaborative Care Model (CCM)/Integrated Care Model

This model is the most commonly used and studied regarding TP service delivery in inpatient settings. This model follows a patient-centered approach where the TP provider collaborates with the primary care provider by supervising the onsite service provider regularly (daily

to weekly rounds). This model relies on a dedicated onsite "care manager." The care manager is a mental health professional with additional training in TP who administers screening tools, coordinates with primary care providers and TP providers, and also ensures adequate treatment adherence.

Several notable features and modifications of the CCM have been adopted in studies examining the use of TP in inpatient settings. These include (a) stepped-care, which involves referring patients with complex needs to tertiary care centers, where the onsite psychiatrist is available; (b) hub and spokes, which consists of a center with telepsychiatrists (hub) providing services to multiple centers (spokes); and (c) multidisciplinary, which involves a team of dedicated professionals at the center receiving TP services.

TP services provided to a geropsychiatric unit operated under a multidisciplinary team (program director, registered nurses, licensed clinical social workers, nurses, certified nurse aides, activities coordinator, and a physician's assistant)[6] is an example for the CCM model. Here, the registered nurse was the point of contact for daily psychiatric rounds through telemedicine, and she did a physical examination of patients, recorded orders, and noted medication changes.[6] In another setting for detained patients (a medical center with no psychiatric unit), TP used the CCM model—the resource person here, however, was a mental health professional (social workers or psychologists). TP consultations were arranged after the patients were "boarding" on the medical wards rather than for initial evaluation.[7] In the CCM model, the overall decision-making is in the hands of primary care providers at the spokes, working in liaison and supervision with the telepsychiatrist.

Teleconsultation Model

This model has been used to provide CL services using TP for patients admitted in medical/surgical units. In this model, the TP provider is a CL physician working at a specialized center, and the medical/surgical unit requesting consultation may comprise one or more mental health professionals (trained nurse or psychologist) and the primary care provider. The initial evaluation is done by the telepsychiatrist, with or without the support from onsite mental health professionals. The TP provider consults with the primary care provider regarding ongoing treatment, and treatment recommendations are given to the primary care provider. The TP provider does not deliver ongoing care, instead assists the primary care provider. Treatment decisions are those of the primary treating team, in contrast to the CCM above, where the decisions are made jointly. Merits of this model include higher utilization of resources, easy accessibility, and opportunity to strengthen the skills of primary care providers for caring for mental health issues in their patients.

TP provided by a university medical center to a small academic hospital that did not have its own onsite CL psychiatry team is an example of this model.[8] A resource nurse at the center receiving TP service operated the telemedicine cart and maintained records. In another university setting providing TP to peripheral hospitals, a psychologist was available as part of the primary medical/surgical team at the periphery, who did the initial assessment. [9]

Direct Care Model

This model involves a telepsychiatrist from a specialized center seeing patients admitted at another distant center for situations where the local psychiatrist is not available due to any reason (vacations, personal emergency, etc.). In this model, the telepsychiatrist does the initial evaluation using videoconferencing and is responsible for ongoing sessions and treatment recommendations. The telepsychiatrist may coordinate care with primary care providers, but TP providers hold primary responsibility for the care of patients. The model has the advantages of easy accessibility, ensuring continuity of care, and higher quality of care, but falls short on comprehensive and collaborative care. Since the burden of care is entirely on the TP provider, it does not meet the aim of increasing the number of patients seen via TP.[10]

Essential illustrations of these models appear in **Figures 1–3**.

Evidence for Inpatient Telepsychiatry (TP)

The available literature on TP in inpatient settings comes from high-income countries such as the United States, Australia, and countries from the European Union such as Finland. Studies compared either face-to-face with the TP consultations or were intended to show the effect of TP in a pre-post design. Outcomes were focused on effectiveness, cost-effectiveness, satisfaction, and reliability.

Effectiveness and Cost-Effectiveness of TP

The effectiveness of TP across studies was evaluated by examining clinical outcomes. A study from Australia showed that TP could be an effective medium for patients admitted with psychosis. This TP service was a direct care model. The reduction of symptoms on the brief psychiatric rating scale preadmission and discharge were significant in the TP group.[11] Another study from the USA assessed treatment effectiveness with a patient self-assessment survey and staff's assessment of clinical outcomes. They found that direct care TP, as a model of service delivery, was effective in both patient and staff-rated outcomes. Interestingly, patient-rated development of rapport and effectiveness of treatment were higher than staff ratings.[12] Both of these studies had a prepost design and did not have any comparison group.

When it comes to literature on cost-effectiveness, there were very few studies. Mielonen and colleagues studied the delivery of TP via videoconferencing, which was limited to counseling, therapy, consultations, and teaching at Finland University Hospital.[13] Authors found videoconferencing as a relatively inexpensive method compared to the conventional mode of service delivery. A study from forensic settings also showed that TP was a cost-effective alternative.[14] Although not as a primary outcome, another study from Australia found that TP improved the acceptability of treatment by curbing the travel cost.[15] In D'Souza's study, although satisfaction and improvement of symptoms were primary outcomes, the authors found that re-

FIGURE 1.

Model For Inpatient Telepsychiarty (TP) Delivery in Psychiarty Units: Collaborative Care Model/ Integrated Care Model

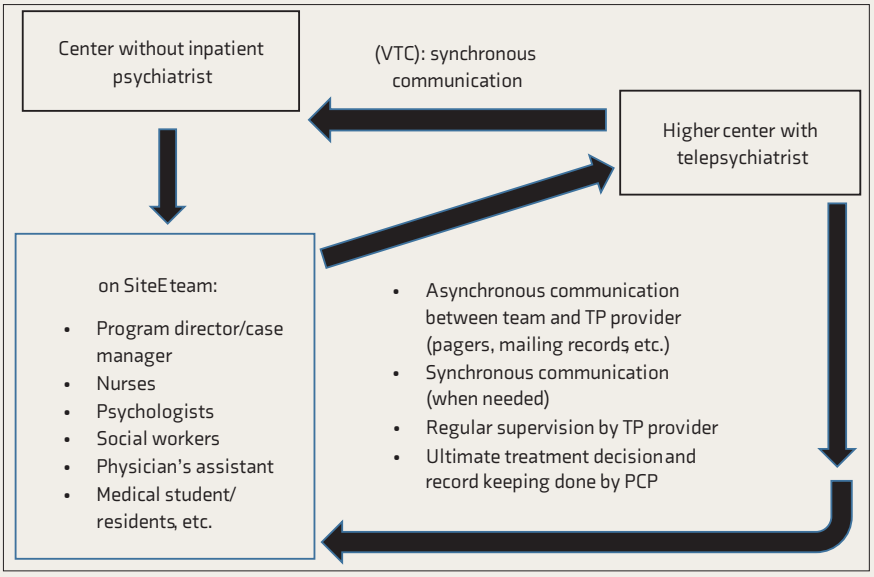

Figure 1 illustrates a model where center receiving TP services has a multidisciplinary team; one member of team is assigned to be "care manager." Physical examination and emergency management is done by on-site team and request for consultation along with communication of case history is done by asynchronous communication. TP provider then assesses patient with collaboration with care manager and addresses the treatment concerns. Regular supervision is ensured by TP provider.

FIGURE 2.

Model for Inpatient Telepsychiatry Delivery in Medical/Surgical Units: Extension of Traditional Consultation–Liaison (CL) Model/ Telemedicine-Based Care Model

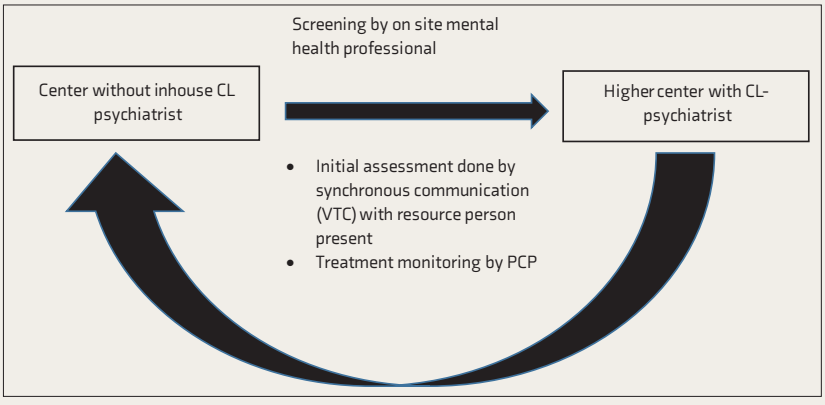

Figure 2 illustrates a model where consultation calls are assessed by an on-site mental health professional and screened for need of TP consultation. TP provider is often contacted by asynchronous communication after which initial assessment is done by the TP provider in the presence of an on-site resource person and treatment recommendations are made. Primary care provider (PCP) remains in-charge of all treatment decisions.

Abbreviations. CL: consultation–liaison, PCP: primary care physician.

duction in travel costs was a significant factor for acceptance by service users of treatment via TP.[11]

Reliability

Several authors have assessed for the reliability of TP vis-a-vis conventional face-to-face treatment. Reliability was evaluated by comparing the scores of assessment and the diagnoses made by at least two raters—either both done using TP or one rater using conventional methods of assessment.[16] In a study from Australia conducted over 14 months in a psychiatric inpatient unit, specialist psychiatrists interviewed subjects using a semistructured interview alternating interviewer and observer configuration. Diagnoses and ratings were recorded at the end of the interview. The main instrument used was the brief psychiatric rating scale. This study compared the agreement between the observer and interviewer. The authors concluded that diagnosis was reliably made using TP.[17] Another study that focused on inpatients with depression also found that TP could be reliably used to assess patients with the Hamilton depression scale.[18] Furthermore, a recent study conducted in an inpatient department of a university-affiliated hospital in Iran evaluated the diagnostic agreement between TP assessment and face-to-face assessment and revealed that the diagnostic agreement between the two interviewers was 75%.[19]

Satisfaction

The majority of studies summarized "patients" responses to quantitative self-report questionnaires with descriptive statistics for assessing satisfaction. A study from Finland found that TP had high patient satisfaction when evaluated on a self-report questionnaire (80% considered it to have been useful).[15] Another study assessed satisfaction on a five-point Likert scale and found TP to have high patient satisfaction. However, the authors found that patients admitted with psychosis reported more difficulty hearing the doctor than patients without psychosis. Patients incorporated virtual teleconferencing into delusions, which may seem to make TP an unfavorable mode for treatment for patients with acute psychosis, who require inpatient care.[12] Another study from California used a direct care model for two days, and "patients" feedback was collected after every session. Patients expressed a positive experience with telehealth and no preference for in-person care; moreover, all patients seen by the tele-provider preferred the TP approach. Other studies, too, showed high patient satisfaction for TP in inpatient care.[7,11,17–20] All studies are summarized in **Table 1**.

TP in Different Age Groups

Most of the studies have assessed inpatient TP in general adult patients, and

FIGURE 3.

Direct Care Model

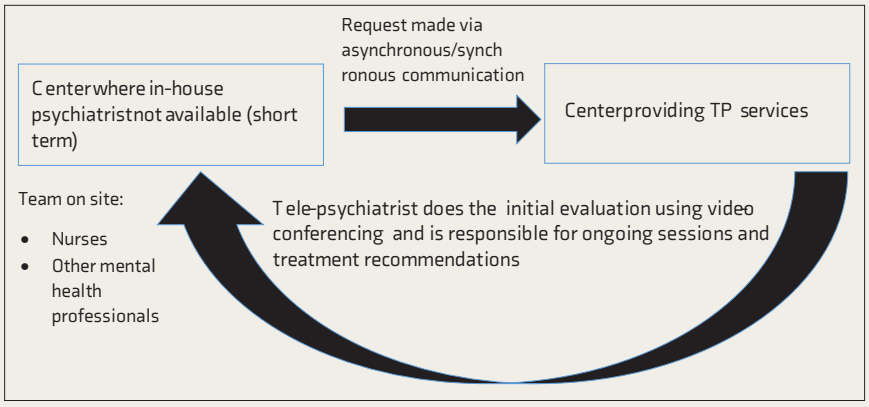

Figure 3 illustrates a direct care model which has been used in situations where an inhouse psychiatrist was not available for service delivery for a short period of time. In this model, the on-site team, often consisting of residents or medical students do initial physical assessment and ensure patient's safety, following which request is made for TP consultation. TP provider does the initial evaluation and is responsible for ongoing treatment recommendations along with training and supervision of the on-site staff.

there were only a handful of studies in extremes of age groups. Studies have evaluated this model of service delivery in geriatric patients residing in nursing homes and have found TP to be reliable after comparing assessment scores to in-person assessment.[21–23] One study from Oklahoma assessed the use of TP in an inpatient geropsychiatric unit at an under-served facility using a multidisciplinary treatment team model. The authors analyzed patient and family satisfaction survey data for a period ranging to 12 months before the inception of telemedicine and 12 months after inception. Results showed a positive correlation between telemedicine and patient/family satisfaction.[6] Studies for inpatient TP delivery for children and adolescents are still lacking.

Opportunities and Proposed Model for Inpatient Telepsychiatry in India

With over 560 million Internet users, India is the second-largest online market in the world, ranked only behind China. By 2023, there will be over 650 million Internet users in the country.[24] India has a predominantly rural population, constituting around 72% of the total. In 2019, rural users outnumbered urban Internet users by 10%, thereby progressively narrowing the digital divide that had existed earlier.[24] A huge opportunity lies in using TP as a primary mode of service delivery in remote areas, where specialist psychiatry services are not available. The availability of psychiatrists (per lakh population) as found in the National Mental Health Survey states varied from 0.05 in Madhya Pradesh to 1.2 in Kerala, with most states even falling short of the requirement of at least one psychiatrist per lakh population.[25] The availability of psychiatric social workers, psychologists, and psychiatric nurses was more sobering. The limited availability of specialist mental health human resources has been

TABLE 1.

Summary of the Evidence of Telepsychiatry-Based Service Delivery for Inpatient Care (*N* = 17 Studies)

Author & Year	Setting and Population Studied	Mode of Telepsychiatry Used	Model	Outcome Assessed	Result/Comments
Baigent et al., 1997	Adult state hospital inpatients	Videoconferencing	Compared face to face interviews with video consultations	Reliability and satisfaction	Reliability: BPRS ratings similar, though difficulty with "overall concern" and affect. Many patients were satisfied and preferred it instead of in-person
Ball et al., 1997	Adult inpatients	Videoconferencing	Only tele-assessment	Satisfaction	Good satisfaction compared with in-person, telephone, and hands-free telephone
Montani et al., 1997	Geriatric inpatients	Videoconferencing	Psychometric evaluation of face to face versus tele-assessment	Reliability of psychometric tests	Small differences in mean scores between video and face-to-face administration
Mielonen et al., 1998	Adult inpatients	Videoconferencing	Direct care model	Satisfaction and costs	High patient satisfaction (80% considered it to have been useful). Savings in health care costs, reduction in travel, and ease and speed of consultation
Alessi et al., 1999	Adult forensic inpatients	Videoconferencing	Direct care model	Cost-effectiveness	Telepsychiatry is cost-effective
Ruskin, 2000	Adult inpatients with depression	Videoconferencing	Direct care model	Reliability	Reliability coefficients similar for in-person and telepsychiatry
D'Souza, 2000	Acute Psychiatric inpatients from 15 rural hospitals	Videoconferencing	Direct care model	Satisfaction and treatment outcome	Significant improvement in the mean total BPRS scores from initial assessment to follow-up with good inter-rater reliability. Reduction in travel costs with high patient satisfaction

Menon et al., 2001	Elderly patients admitted to the acute medical unit or the geriatric evaluation and management unit of a veterans affairs medical center	Videoconferencing	Direct care model	Reliability (scores of assessment)	Remote assessment of depression and of cognitive status was comparable to in-person assessment
Jones et al., 2001	Geriatric psychiatry inpatients	Videoconferencing	Psychometric evaluation of face-to-face versus tele-assessment	Reliability for diagnosing depression	Good agreement between a face-to-face observer and the telemedicine interviewer
Holden & Dew, 2008	Community-based inpatient setting (gero-psychiatric unit)	Videoconferencing	Collaborative care model	Patient/family satisfaction 12 months prior to inception of telemedicine and 12 months post that	Positive correlation was found between telemedicine and patient/family satisfaction with perception of benefit from treatment
Grady et al., 2011	Rural inpatient psychiatric unit	Teleconferencing (VTC)	Direct care model	Psychiatrist's efficiency and consistency	Patients with psychosis reported more difficulty hearing the doctor than without psychosis. Patients rated development of rapport and effectiveness of treatment higher than staff ratings. Telepsychiatry services were more effective with higher functioning patients.
Devido et al., 2015	Psychiatric inpatients in a general hospital	Videoconferencing	Teleconsultation model	Asses model of inpatient consultation–liaison psychiatry services	Telemedicine is a viable model for inpatient consultation–liaison psychiatry services to hospitals without onsite psychiatry resources and represents a viable alternative model of service delivery
Graziane et al., 2017	Psychiatric inpatients in a general	Videoconferencing	Teleconsultation model	Common consultation questions, patterns of diagnosis, and recommendations	Most common diagnosis was delirium followed by dementia. Investigations were recommended and medications were started or changed
Evangelatos et al., 2018	Case series involving 12 inpatients (24 visits)	Videoconferencing	Direct care model		No differences between telehealth and non-telehealth patients in use of emergency medications, codes, and length of stay. Patients expressed positive experience with telehealth and no preference for in-person care; high preference for TP for maintaining continuity
Kimmel &Toor, 2018	Initial and follow-up consults of inpatients in medical ward	Videoconferencing and phone calls	Collaborative care model	To develop the first US program covering the consult service to patients in the medical wards of unaffiliated, rural hospitals	Benefits noted by consultants, patients, and community hospital medical staff
Kimmel et al., 2019	Inpatient and outpatient services in a critical access hospital	Videoconferencing	Collaborative care model	To develop service delivery model	Telepsychiatry was useful for supporting inpatient care at critical access hospital by regular access to psychiatrists
Mazhari et al., 2019	Adult inpatients	Videoconferencing	Compared face-to-face interviews with video consultations	Reliability (diagnostic agreement) and satisfaction	Diagnostic agreement between the two interviewers was 75% and was acceptable by majority of patients

Abbreviation. BPRS: Brief Psychiatric Rating Scale.

one of the barriers in providing essential mental health care to all. Limited availability contributed to the treatment gap of around 85% for mental disorders. The use of TP could expand access to a larger, difficult-to-reach population. TP may also provide training opportunities for health care staff working in inpatient wards to address the basic mental health needs of their patients.

All of the models we reviewed were developed and studied predominantly in a Western context. Thus, given the differences in infrastructure and human resource capacity, these models need to be adapted for consideration in the Indian setting. Therefore, we propose a model for inpatient TP delivery in an Indian setting, as illustrated in **Figure 4**. The model would be based on the CCM working on the principles of the "hub and spokes" model. The hubs could be tertiary care centers like government medical colleges with psychiatrists, which would deliver TP services to one or more spokes such as community health care centers and district hospitals (where psychiatrists are not available for inpatient care). This model would require building infrastructure, including installation of delivery systems, ensuring adequate internet connectivity. The peripheral centers would need to have a team dedicated for TP, preferably multidisciplinary comprising (a) one medical officer, (b) a nurse for clinical assessment and day-to-day clinical care, (c) technician with training in operating and smooth functioning of the delivery system, and (d) other mental health professional staff such as psychologists and social workers. However, the existing pool of human resources in the country might not always allow such a resource-intensive plan. Hence, the system should be flexible in accordance with localized contexts. The "hub" will involve in the capacity building of the existing human resources.

An induction and experiential training would be required for all the staff at the remote sites. Having adequate technical infrastructure and training have been documented as necessary requisites for optimizing the successful implementation of TP.[3] The TP service provider and centers receiving services should aim to build a proper working and professional relationship.

The primary team of medical professionals would initially assess admitted patients. TP providers could have access to the clinical assessments and medical records of admitted patients through asynchronous communication so that they could review it before the scheduled videoconferencing-based inpatient rounds. The "hub" could hold regular rounds with each center; the frequency could be dictated by the case-load of the particular remote site. The TP providers would plan the ongoing treatment in collaboration with the primary team. The care managers would be responsible for its timely implementation, and the nursing professionals would carry it out at the ground level. Teams of all the remote sites could attend rounds to encourage vicarious learning and discussion, and ongoing training and capacity building should be supported.

Challenges for Inpatient TP Model in Indian Setting

There could be structural, systemic, and attitudinal barriers to implement this model.[3,4] Lack of existing infrastructure and problems with internet bandwidth are structural barriers. There is a shortage of mental health professionals. And there is limited experience with TP (or telemedicine in general) for existing professionals. These can act as systemic barriers. There is also a lack of governance for developing TP initiatives. The legal aspect of TP remains another roadblock. Other challenges include issues of feasibility and concerns of the medical staff regarding providing treatment via TP to certain types of populations like patients with psychotic illnesses. The problems of privacy, the possibility of stigmatizing, and marginalizing by the health care system also may interfere.[3] Research also shows that patients may also have concerns about TP, such as loss of human contact, limited technological competencies or skills, concerns about privacy, quality of audio and video transmission, and reliability of videoconferencing for diagnostic assessment. Therefore , concerns of patients about TP require further consideration.[26] It is important to note that telemedicine guidelines focus on outpatient care, and health insurance may cover out-patient-based telemedicine consultations only.

FIGURE 4.

Proposed Model for Inpatient Telepsychiatry Delivery in India (Public Sector)

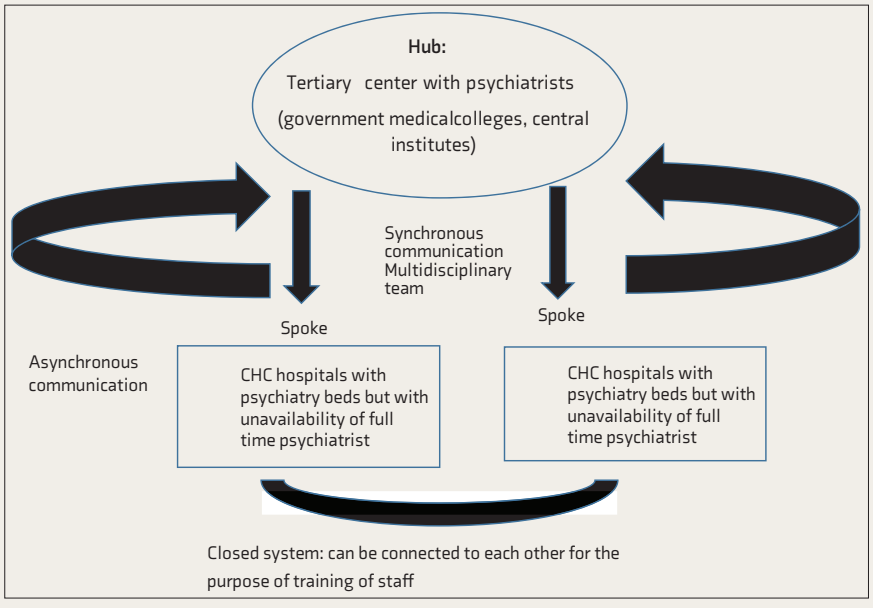

Figure 4 illustrates the proposed model where tertiary centers would provide TP services to one or more peripheral centers. The peripheral centers would have an onsite team, including one trained care manager. Care manager would request appointments, send medical records and relevant physical findings using asynchronous communication and then higher centers would use synchronous communication to assess patient in presence of care manager and discuss treatment plan. Regular supervision would be ensured. Multiple attached centers will have provision to attend rounds for the purpose of learning.

Abbreviation: CHC, Community health center

Conclusion

TP is an evolving field that shows great potential to address the mental health needs of a large number of people who otherwise do not have access to mental health services. The available literature, in the context of inpatient settings, has shown TP to be a widely accepted, cost-effective, reliable, and effective mode of treatment. This mode of service delivery warrants further research and consideration for Indian inpatient psychiatric settings.

Declaration of Conflicting Interests

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Geriatric Telepsychiatry: Promoting Access to Geriatric Mental Health Care Beyond the Physical Barriers

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ABSTRACT

Psychiatric illnesses are an important contributor of morbidity and mortality in older adults. There is increase in older adults with psychiatric disorders paralleling their growth in absolute numbers. This leads to challenges in mental health care and service delivery. Several barriers that exists in our community hinder older adults from receiving mental health care. Additionally, lack of adequate human resources in geriatric mental health care compounds the problem. Telemedicine, though not new in other fields of medicine, is relatively new in the practice of psychiatry in India. This is probably due to lack of clear guidelines and regulations regarding the same in India. There is a recent increase in teleconsultations in India similar to other developed countries due to ongoing COVID-19 pandemic. The recent telepsychiatry operational guidelines have made telepsychiatry a legitimate and official practice in India. Challenges specific to older adults in the form of low digital literacy, sensory issues, and cognitive impairment can be overcome by adopting telepsychiatry services in coming years. Concerns related to security and safety of telepsychiatry require further evaluation.

Keywords: Telepsychiatry, older adults, mental health care, operational guidelines

An increase in the older adult population is a global phenomenon occurring more rapidly in low- and middle-income countries like India. The proportion of older adults (age 60 years and above) in India has increased from 5.2% in 1950 to 11.6% (103 million) in 2011.[1] It is expected to grow to 19% (340 million) in 2050.[2] An increase in the prevalence and care requirements of geriatric mental health problems needs urgent attention. Trained human resources available for geriatric mental health care are grossly inadequate in India. Implementation of innovations such as geriatric telepsychiatry can help to address this challenge. This article attempts to summarize the issues related to geriatric telepsychiatry in the Indian and global context.

Public Health Importance of Mental Health Problems in Older Adults

There is high prevalence of mental health problems such as depression, anxiety, dementia, substance abuse, and suicidal risk, with significant morbidity and risk for mortality in older adults. Several epidemiological studies,[3,4] National Mental Health Survey (NMHS), 2016,[5] and Dementia India Report, 2010,[6] have reported the prevalence, treatment gap, and burden of geriatric mental health disorders. Of older adults, 10% to 15% have mental disorders (including dementia), and an additional 5% to 10% have sub-syndromal symptoms, with an estimated treatment gap of nearly 90%. This has adverse consequences on the physical health, life expectancy, quality of life, family, and finances with significant public health implications.

Challenges in Geriatric Mental Health Care Services

Statutory provisions from the "Mental Health Care Act (MHCA), 2017" and "The Maintenance and Welfare of Parents and Senior Citizens Act, 2007" mandate provision of geriatric mental health services. However, the majority of older adults reside in rural areas (70%), and psychiatry services are still limited to urban metros and cities. Low awareness and priority for mental health, scarcity of trained human resources, lack of age-friendly transport and health systems, stigma, financial constraints, and declining support from the family caregivers are important challenges related to geriatric mental health care.[7–9]

Need for Geriatric Telepsychiatry

Specialized human resources for geriatric mental health care are inadequate, even in developed countries. India has a wider gap in the availability of general as well as geriatric mental health professionals that is difficult to be filled soon.[10,11] Public mental health initiatives like the District Mental Health Program and an increase in the number of medical college hospitals[12,13] are helpful to address this treatment gap. Still, they are inadequate to meet the need for specialized geriatric mental health services.[14] Geriatric telepsychiatry provides the opportunity for extending the geriatric mental health services to those who are difficult to reach in-person as well as for improving the continuity of care in general.

Geriatric Telepsychiatry in the Global Context

General and geriatric telepsychiatry is relatively well established in developed countries. Several studies have looked at the feasibility, acceptability, effectiveness, and comparability of geriatric telepsychiatry to traditional in-person service. A retrospective study on 100 telepsychiatry consultations between 2002 and

2009 from Canada reported a high level of satisfaction and usefulness among specialists and patients.[15] Another retrospective study on 134 community-based telepsychiatry consultations from Australia reported its use as an adjunct to an in-person consultation.[16] A recent systematic review of studies on geriatric telepsychiatry for diagnostic and cognitive assessments reported its applicability and acceptance despite barriers.[17]

Experience of Geriatric Telepsychiatry in the United Kingdom and Australia

Most of the initial assessments are done through in-person consultations at the clinic or home, with many later interactions happening over the phone. Recent times have seen an increase in the usage of videoconference-based consultation. Although the use of newer technologies by older people is comparatively lesser than the younger generation, most of them are able to use mobile phones. The older adults who live in care and nursing homes receive help from the staff to use modern gadgets to communicate with their family and clinicians. The use of telepsychiatry has gone up in the context of COVID-19-related restrictions in personal meetings for older adults. It has been observed that geriatric telepsychiatry is feasible and reliable. Common examples include remote ward reviews and nursing home consultation, which can be adequately interactive. Telepsychiatry is also used for assessments, interventions, and monitoring. Assessments for depression, cognitive testing, especially memory assessments, dementia diagnosis through telephone and video conference have been feasible and comparable to face-to-face assessment and intervention.[18,19] Interventions can include counseling, psychoeducation, cognitive-behavioral and other psychotherapies, group therapy, and occupational therapy. Extending the use of telepsychiatry is seen in research for data collection and follow-ups. There are many safe, interactive video-calling options through the National Health Service in the UK, which is being used by the general practitioners (GPs), consultants, and nurses. There are many positive points of practice of telepsychiatry for older adults. It connects clinicians and patients straight away, without necessitating the travel, which avoids unnecessary risks for the elderly with mobility or frailty issues. Multidisciplinary professionals and family can collaborate to overcome physical barriers. Telepsychiatry encourages clinician–patient relationships through the use of "virtual space" in the consultation.[20] Potential for reduction of health care costs in telepsychiatry requires further evaluation.[17] However, there are many concerns as well with telepsychiatry practice. Primarily, the limitations in physical examination and compromise in the "being there" element, and the ability of older adults to use modern technologies and ensuring privacy during the consultation are essential concerns.[21] There are also medical insurance and medicolegal issues. Considering recent experiences, health care for the elderly may go toward a hybrid model. Traditional in-person consultation and telepsychiatry (phone/online) combination (a hybrid model) will be more frequently practiced reaping the benefit from both models of care. This will be especially beneficial for older frail persons.[20]

Geriatric telepsychiatry has been utilized for many years for service provision to older people in rural and regional Australia, given the large area managed by the publically funded Older Persons Mental Health Services. The systematic review about telepsychiatry concluded that it could be an effective and reasonable alternative in achieving similar health outcomes as compared to face-to-face consultations, especially when face-to-face consultations were not possible.[22,23] The Federal Government of Australia provided a rebate for the Medicare Benefits Schedule for geriatric telepsychiatry to encourage its use.

Telepsychiatry is used effectively to conduct family meetings where family members live in distant places. Also, it is utilized to hold multidisciplinary meetings with GPs, specialists (neurologists, cardiologists, endocrinologists, geriatricians, etc.), and mental health professionals (e.g., psychologists, social workers, occupational therapists, etc.). Geriatric telepsychiatry helps in providing the coordinated, practical, and best possible management to older people in the current COVID-19 scenario.

It is essential to understand the local and cultural factors in considering telepsychiatry in older people. In Australia, whenever possible, it is encouraged to have a locally-based health care professional present during the telepsychiatry session. This helps in the psychiatric assessment as well as the immediate provision of a management plan.[24] It is helpful to provide training to locally-based health care professionals regarding the use of telehealth technology. The Royal Australasian College of Physicians (RACP) developed the "The RACP Introduction to Telehealth" online training module for health care professionals to obtain skills required to use telehealth effectively.

Geriatric Telepsychiatry in the Indian Context

Telemedicine and telepsychiatry have been tried in India for many decades, however, with limited impact. The past decade has witnessed a rapid growth of digital and telecommunication services, which has given a flip to telemedicine. Telepsychiatry services, including geriatric telepsychiatry, are increasingly being used in institutions like the National Institute of Mental Health and Neurosciences (NIMHANS). Telepsychiatry services were provided directly to patients and caregivers, outpatients at district hospitals, and inmates of institutional care such as prisons and destitute homes. The feasibility, utility, and acceptability of telepsychiatry services has been demonstrated in recent studies.[25–27] Psychiatry, neurology, and neurosurgery specialists provided tele-neuropsychiatry consultation through Specialist-Doctor-Patient model as part of the state-run program for the two central prisons from July 1, 2014, to June 30, 2016. A retrospective file review was done of the tele-neuropsychiatry case records at Tele-Medicine Centre, Located at Tertiary Neuro Psychiatric centre of South India. A total of 53 patients were provided tele-neuropsychiatric consultation over 2-year period. Of these, 48 (90.6%) Telepsychiatry services have been used to provide collaborative care with primary care physicians for the care of persons with mental illness, including older adults.[28,29]

A telepsychiatric after care (TAC) clinic at Telemedicine Centre of NIMHANS, Bengaluru, India, has been successfully conducting video consultations for follow-ups of psychiatric patients, including the geriatric population from the year 2017. A file review of 669 video consultations provided to 213 patients in the first three years (2017–2019) from telemedicine center of a tertiary care academic hospital reported the sociodemography, clinical profile, tele aftercare consultations details and outcome. This first large-scale study reports TAC as a useful alternative method that can supplement in-person follow-up.[30]

In view of limitations of physical examination in teleconsultations, Telemedicine Centre, NIMHANS, Bengaluru, India, designed a clinician-centric concept of "virtual physical examination" (VPE) exclusively for video consultations where a physician can conduct inspection section of systemic physical examination reasonably well.[31,32] The validation exercise of this VPE is undergoing at this center. This validation could be planned exclusively for geriatric psychiatry in future studies.

Experience of Geriatric Telepsychiatry at NIMHANS

Geriatric clinic and services at NIMHANS have used telemedicine to promote follow-up and continuity of care for persons with dementia and other psychiatric disorders in older adults. This has enabled periodic review and management of patients from long distances across the country. The experience of conducting videoconference-based follow-up consultations for 30 older adults demonstrates the feasibility of this model in the Indian setting (Mukku et al., 2020 under review). The presence of family caregivers facilitated the effective implementation of telepsychiatry services, even for those with cognitive impairment. These consultations were implemented using videoconference platforms after written informed consent from the patient or caregivers (if the patient did not have the capacity to consent). The telemedicine unit coordinated the administrative aspects and training or orientation of users for the videoconference platform. However, geriatric telepsychiatry services were used only for the follow-up consultations after detailed in-person evaluation.

The prescriptions were sent to the patients or their family caregivers by email or smartphone applications like WhatsApp. However, this service was used selectively in a limited number of patients in view of the lack of systematic guidelines and regulatory approval until recently.

In addition to this, geriatric telepsychiatry consultations were done between psychiatrists and social workers who did home or institutional visits.

The development of a dedicated electronic record system (GERISOFT) facilitated telepsychiatry consultations without dependence on the physical medical records. Integrating secure asynchronous transfer of clinical details and investigation results to electronic records will be helpful in geriatric telepsychiatry.

Geriatric telepsychiatry consultations were also provided for collaborative care management of patients with Alzheimer's dementia by primary care physicians as part of a structured online training program. After initial training for evaluation and management of Alzheimer's dementia, primary care physicians presented the clinical details of patients with dementia to an expert geriatric psychiatrist. The primary care physicians continued the evaluation and management of the patient based on the guidance from the expert.

Group intervention for caregivers of persons with dementia play a vital role in the management of dementia for promoting the understanding of the diagnosis and the management of behavioral and psychological symptoms. In view of the difficulty in the physical participation of many caregivers due to logistic constraints, online group intervention through video conference was initiat ed. This received an excellent response from the caregivers. Systematic development of the module for online support group intervention for caregivers of persons with dementia has been undertaken as part of an ongoing doctoral research program.

Telemedicine and Telepsychiatry Guidelines—a Paradigm Shift

The Board of Governors of Medical Council of India released the telemedicine practice guidelines prepared in partnership with the National Institute for Transforming India (NITI) Aayog on March 25, 2020.[33] This has given the much-awaited regulatory approval and framework for the telemedicine practice in India.

The recently released *Operational Guidelines on Telepsychiatry* by the NIMHANS, Bengaluru, India, in association with the Indian Psychiatric Society and Telemedicine Society of India, has contributed to a paradigm shift in the practice of telepsychiatry.

The guidelines have classified teleconsultation based on the mode of communication as video-based, audio-based, and text-based. The consultations can have synchronous (direct interaction) or asynchronous (e.g., E-mail) components. Depending on the purpose of consultation, it is classified as the first contact consultation and follow-up consultation. Teleconsultation is categorized depending on the individuals involved as a patient to specialist/registered medical practitioner (RMP), caregiver to specialist/RMP, specialist to RMP, and health worker to specialist/RMP.[33]

The context of the COVID-19 pandemic has necessitated a rapid expansion of the general and geriatric telepsychiatry services, including the urgent release of practice guidelines.

In view of excess risk for complications related to COVID-19 in older adults, routine in-person visits for health care were avoided by many patients and family members themselves. Mental health professionals also discouraged in-person visits for these patients and initiated the active use of telepsychiatry services to provide mental health care.

Special Issues in Geriatric Telepsychiatry

Many issues of geriatric telepsychiatry are common to that of telepsychiatry for general adults. These issues are highlighted in the relevant articles published as part of this supplement. In this section, we discuss a few issues that are more commonly associated with geriatric telepsychiatry services.

Sensory Impairment

Visual and hearing impairment are more commonly seen in older adults.

Geriatric telepsychiatry services require consideration of these special needs and enable inclusive services as much as possible. Support from a health worker or family caregiver and adaptation of the communication strategies and acoustic settings of the teleconsultation room to accommodate the unique needs of this population would be helpful. Given the hearing and visual challenges in the geriatric population, it is essential to utilize strategies to enhance the audio and video quality of telepsychiatry.[34]

Cognitive Impairment

Older adults have a high prevalence of cognitive impairment, including dementia. Those diagnosed with other psychiatric illnesses such as depression and psychosis have increased risk for cognitive impairment. The ability for active participation in the teleconsultation may be influenced by cognitive status. There are potential advantages and disadvantages of telepsychiatry in this population. Older adults living alone with initial stages of cognitive impairment will have more challenges in seeking traditional in-person consultations. Some of them may either require additional support or may be unable to learn the process for telepsychiatry consultation independently. Geriatric telepsychiatry may also offer the opportunity to participate in cognitive assessment from the patient's natural environment that is likely to be less anxiety-provoking than traditional consultation rooms. Several studies have demonstrated the feasibility of online cognitive assessment as well as interventions for caregivers of persons with dementia.

Older Adults Living in Institutions

Older adults living in residential care institutions have increased vulnerability for mental health issues and have increased need for preventive, promotive as well as therapeutic mental health services. Despite this, many such institutions may not have provisions for mental health care services, and promoting geriatric telepsychiatry can be an effective strategy to address this need. This can also promote the cost-effectiveness of these services. The feasibility of telemedicine-assisted dementia care residential services has also been demonstrated globally as well as in India.

Asynchronous Technology-Assisted Caregiver Intervention for Dementia

The World Health Organization has developed an i-support intervention for dementia caregivers. The feasibility and effectiveness of this intervention have been studied in India in collaboration with NIMHANS.[35] Video-based asynchronous interventions might have greater acceptability and utility than the text-based interventions in low- and middle-income countries like India.

Tele-Assisted Nonpharmacological Interventions

Nonpharmacological interventions such as psychotherapy and family therapy; dietary and lifestyle interventions such as yoga, physical exercise; and noninvasive brain stimulation (transcranial direct current stimulation), and long-term multi-domain interventions play an important role in the preventive, promotive, and adjuvant treatment of geriatric mental health conditions. Many of these interventions can be delivered as tele-assisted interventions for effective utilization in older adults having barriers to traditional in-person interventions.

Legal Issues

Many older adults with dementia have impaired cognitive capacity and high vulnerability for being victims of abuse. There are important legal issues related to dementia. Providers, as well as users, might have concerns about ensuring confidentiality and privacy in geriatric telepsychiatry consultations. The practice guidelines for telemedicine in India are more flexible and facilitate the users and providers to have a liberal choice of technologies without the restrictions for ensuring confidentiality and privacy. This has the advantage of promoting the use of telemedicine in the context of limited resources in India. But there is a need to improve the safety measures in the future to ensure the successful implementation of telemedicine services in the long term. The restrictions in prescribing anti-dementia drugs in the first consult (on telemedicine) is a concern that needs to be addressed. However, they are allowed in a telepsychiatry follow-up consultation. The mandatory requirement of the presence of the patient during the first consult is essential in the practice guidelines for telepsychiatry; however, during a follow-up consultation patient may or may not be present for consultation. Every such follow-up consultation (in absentia of the patient) should be accompanied by a recently issued formal authorization letter by the patient. However, a psychiatrist can provide telepsychiatry follow-up consult without an authorization letter also if (a) a psychiatrist has documented the diagnosis of dementia, (b) the patient is in the "'moderate" or "severe," stage (c) patient lacks the capacity to consent, and (d) psychiatrist is able to recognize the family member. This is left to the professional discretion of the psychiatrist. Many caregivers may have great difficulty in convincing the patient with dementia to cooperate for an initial evaluation in the hospital, and they may benefit from guidance through telepsychiatry. However, such patients can benefit from health care providers visiting the patient's home and switching to telepsychiatry consult assisted by a health care worker. Assessing and issuing medical certificates is another concern; however, operational guidelines state that one should not issue certificates during teleconsultation.

Conclusion

Effective utilization of geriatric telepsychiatry has significant advantages in promoting geriatric mental health care. There is a need for adequate training and promoting awareness among the multidisciplinary mental health professionals as well as the potential target users to ensure effective implementation of geriatric telepsychiatry. Given the multiple advantages of geriatric telepsychiatry, it is essential to encourage the locally-based health care professionals to initiate telepsychiatry services. A few concerns and challenges related to implementation require further evaluation by relevant

experts in the field to facilitate further adaptation of the guidelines as needed for the future.

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Telepsychiatry for Mental Health Service Delivery to Children and Adolescents

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ABSTRACT

Children constitute 40% of India's population. Large number of children with psychiatric disorders and neurodevelopmental conditions are unable to access mental health services due to factors such as unavailability of these services in smaller urban and rural centres and lack of training for primary care providers. Given the relatively easy access to video conferencing technology, feasibility and acceptability of Telepsychiatry, there is an urgent need to invest resources and strengthen the use of Telepsychiatry for child and adolescent mental health training and serviced delivery . This viewpoint article discusses the need,scope,experiences and challenges related to use of Telepsychiatry in the area of child mental health.

Keywords: Adolescent, child, mental health, telemedicine, telepsychiatry

Telecommunications technology in the area of health is almost a century old, with the famous "Radio doctor" influencing people's health and health care way back in America of the 1920s![1] However, it mostly lay dormant, an interesting application at best, with use limited to sharing diagnostic test and radiological images, for the better part of the 20th century. The internet boom and rapid expansion of audio-video conferencing software triggered technological advancements in professional connectivity.[2] Also, shortage of trained health workforce and services infrastructure, especially in rural and remote areas, has mandated a need for telemedicine.[3] Telemedicine is,

Delivery of health care services, where distance is a critical factor, by all health care professionals using information and communications technologies for the exchange of valid information for the diagnosis, treatment, and prevention of disease and injuries, research and evaluation, and the continuing education of health care workers, with the aim of advancing the health of individuals and communities.[4]

Terms "telepsychiatry" and "telemental health" refer to psychiatric and broader mental health services, respectively.[5] Telepsychiatry for adults was first used at the Nebraska Psychiatry Centre in 1957 and in 1974 for children by the Mount Sinai School of Medicine, United States of America (USA).[6,7] Telepsychiatry could have myriad objectives—direct teleconsultations versus training and capacity building; individual versus group service delivery; use by private practitioners for a small group of clients versus systematic use by primary, secondary, and tertiary health care systems; and emergency versus routine outpatient care—achieved utilizing either a synchronous (real-time) or an asynchronous (store and forward) format. Synchronous, two-way, interactive telecommunication format is commonly used, often in the form of video teleconferencing (VTC).

This article gives a perspective on the use of telepsychiatry in child and adolescent mental health care. We discuss the need, scope, operationalization issues, and challenges in telepsychiatry, as well as give an overview of national and international guidelines and current practice of child and adolescent telepsychiatry.

Need for Pediatric Telepsychiatry

Globally increased burden of child psychiatric disorders, shortage of child psychiatrists, inequitable distribution of existing resources, the "aging-out effect" of the workforce, and insufficient funding have led to increased use of telepsychiatry for children.[8,9] Gloff et al.[10] listed convenience, decreased cost, reduced stigma, and better coordination with multiple stakeholders as significant fac-

tors for the preference of telepsychiatry by children and their families. The prevalence of psychiatric disorders in children ranges from 6% to 15%.[11] The number of psychiatrists delivering child and adolescent mental health care in India is 1 per 4–5 million children, with most of them working in cities, making access to mental health care difficult to a large number of children.[12] Given the limited feasibility of reducing the resource gap and the increased access to technology across the country, telepsychiatry appears an ideal resource for the provision of mental health care for children.[13]

Scope of Pediatric Telepsychiatry

International literature on telepsychiatry spans preclinical assessment, clinical evaluation, and follow-up care.[14,15] With adequate technological support in place, and consent and cooperation of the psychiatrist and patient, most aspects of psychiatric assessment and care are amenable for inclusion in a telepsychiatric framework, with adequate addressing of potential barriers and challenges.

Of substantial interest to practitioners and policymakers is the use of telecommunication technology in the training of care providers at the primary and secondary care levels, to upscale specialty services like child mental health. Training and mentoring programs exemplified by the Extension for Community Healthcare Outcomes (ECHO) model[16] have demonstrated efficient and practical skill development in the identification and management of complex disorders like autism at the primary care level. Skill enhancement of primary care providers is exemplified by actual practice change in terms of more appropriate prescribing of psychotropic medications by primary care providers.[17] Psychiatric conditions in children are challenging and confusing experiences for families. Inadequate first-level responses, mostly stemming from a lack of training, are common. The use of telepsychiatry to spread awareness in this manner can be a powerful tool in changing this scenario.

Telepsychiatry is widely used in the correctional settings in developed countries with several advantages, such as eliminating the need for travel, coordination with onsite staff, and timely evaluation and treatment.[18–21] There are some challenges when working with this vulnerable population. There is a risk of a dual agency to both the juvenile justice facility and the patient. The telepsychiatrist must have adequate knowledge of the juvenile justice system, train correctional facility staff about mental health issues in juveniles, and ensure their privacy.[21]

In the Indian context, telepsychiatry can play a vital role in fulfilling the obligations mandated by the Juvenile Justice Act,[22] 2015, and the Protection of Children from Sexual Offences (POCSO) Act,[23] 2012, through the following activities:

- Teleconsultation for children and adolescents in child care institutions (CCIs).
- Teleconsultation for preliminary assessment as mandated by Section 15 of the JJ Act, 2015.
- Training staff of CCIs in the basic concepts of child development, child and adolescent mental health, and child protection.
- Training judiciary, members of the Child Welfare Committee, and Juvenile Justice Boards (JJBs) on child development and child and adolescent mental health issues.
- Online education of children in CCIs on child safety, child development, child mental health, and life skills.
- Telepsychotherapy support to children who need psychosocial support in the aftermath of sexual abuse.

Operationalizing Pediatric Telepsychiatry

Operationalizing telepsychiatry for regular practice calls for attention to administrative, technological, and clinical issues. A needs assessment must precede operationalization.[24] *Best practices in videoconferencing*[25] recommend drafting a program overview, identifying services to be delivered via telepsychiatry, identifying the target patient population and clinicians to be involved in the program, requirements vis-à-vis space, training, technological support, staff, standard operating procedures (SOPs), regulatory and monitoring processes, and sustainability. The choice of the videoconferencing application must be made after appropriate verification of quality, reliability, security parameters, and backup processes. Technological equipment has to be well supported by trained staff with relevant clinical competencies in telepsychiatry. The Indian Telemedicine Guidelines recommend mandatory training for all practitioners intending to provide online consultation within three years of the notification.[26] Besides clinical competencies, adherence to standards of care, liaison with local clinics, and SOPs are vital.[27]

Patient selection for telepsychiatry depends on the current abilities of the patient—Can he/she function well, even in unsupervised settings? Can he/she independently operate the videoconferencing tool? Can he/she independently ensure privacy and safety? Is there a history of aggression, self-harm, noncooperation with the service providers? These requirements are secured in the case of children by the caregiver who would assist in supervising and operating the VTC tool. Additional requirements for children and adolescents include developmental status and child-friendly spaces from where the child could join the call. There must be established liaison with the local health care system in case of any emergency. Although the Indian telemedicine guidelines, [26] 2020, propose that there is no need for parental consent for the age group above 16 years, it is prudent to obtain permission from the parent for anyone below the age of 18 years, given the existing definition of "minor" in the Mental Health Care Act, 2017.[28]

The multifaceted nature of child mental health problems optimally requires collaborative interventions (individual therapy/medication management for the child, family-based/parenting interventions, liaising with the school, and liaising with social services) by a multidisciplinary team. Typically a multidisciplinary team, simultaneously or sequentially, completes the evaluation and intervention processes. In a telepsychiatric setup, mode, and timeline of engagement with the child and family need to be devised in a manner that minimizes the repetition of information and confusion about multiple online appointments and maximizes care and comfort to the child.

Guidelines for Pediatric Telepsychiatry

Several professional organizations have formulated guidelines for pediatric telepsychiatry. **Table 1** summarizes the vital elements of these guidelines.

Experiences and Evidence-Base for Pediatric Telepsychiatry

Experiences and Evidence-Base in the International Context

Despite well-established child psychiatry programs, the increasing demands of pediatric mental health needs have not been adequately met by the pediatric psychiatry workforce in the USA. The use of telepsychiatry has been crucial in mitigating access to mental health care, especially when geography and social determinants such as poverty, socioeconomic disparities, and lack of insurance coverage pose additional barriers. Over the last 50 years, the practice of pediatric telepsychiatry has evolved significantly. Besides synchronous and asynchronous delivery formats, in some cases, additional digital tools to collect structured data using mHealth (mobile health) have also been integrated into the overall virtual delivery of care. In order to provide a clinical and evidence-based framework, the American Academy of Child and Adolescent Psychiatry (AACAP) has created guidelines (refer to Table 1) and more recently video toolkits for the clinicians interested or actively engaged at different levels of Telepsychiatry.[32] The feasibility of pediatric telepsychiatry is well established across a variety of psychiatric disorders in the form of diagnostic reliability.[24] Besides, the clinical outcomes of treatment interventions provided using telepsychiatry in children are comparable to traditional, in-person care.[33] Teenagers spend much time in the online and digital world for their social connections, entertainment, self-expression, and in many places for education. Using the same framework for accessing health care has been advantageous for this population to engage reliably in their mental health services.

Although the evidence of clinical effectiveness is recognized, factors such as legal regulations, licensure, reimbursements, and insurance coverage influence the actual implementation and utilization of telepsychiatry in the USA. All 50 states in the USA have established regulatory telehealth guidelines and supporting infrastructure at varying levels. Just like the licensure requirements for the practice of medicine, a telepsychiatrist in the USA is required to have an active medical license in the state where they are located. Most of the states additionally make it a requirement to have an active license in the state where the patient is located, thus requiring multiple state-specific licenses in many cases. Permitting telepractice across states, even with a unitary license from the state of residence, is being actively explored recently. However, the variability in the regulations and malpractice coverage across the states act as barriers. At this time, there is no requirement for formal training in telepsychiatry for a psychiatrist to deliver care using this modality. Necessitating formal training before

TABLE 1.

Key Elements of Children and Adolescents in Telepsychiatry Guidelines

S. No.	Name of the Guideline	Key Elements
1	RANZCP professional practice standards and guides for telepsychiatry[29]	1. Parents to be informed as per legal requirement 2. Physical requirements—large room, simple toys, table for children, etc. 3. Technical requirements—camera with zoom function
2	ATA practice guidelines for telemental health with children and adolescents[30]	1. Needs assessment and standard operating procedures 2. Legal and regulatory issues 3. General telemental health practices a. Telemental health space b. Telepresenter c. Patient appropriateness d. Working with diverse youth and families e. Consult request data f. Clinical findings and reports 4. Technology considerations 5. Telemental health interventions a. Evaluation and psychological testing a. Pharmacotherapy a. Psychotherapies a. Case management 6. Additional considerations a. Ethical issues a. Competencies a. Clinical supervision a. Future directions
3	AACAP clinical update: telepsychiatry with children and adolescents[31]	1. Legal, regulatory, and ethical issues 2. Needs assessment and model of care 3. Appropriateness of potential sites and patients 4. Sustainability issues 5. Creating a therapeutic virtual space 6. Telepsychiatry evidence base 7. Adaptation to nonclinical settings 8. Training in telepsychiatry
4	Best practices in videoconferencing-based telemental health by ATA and APA[25]	1. Modifications as per the developmental status of children. 2. Adaptation to nonclinical settings 3. Physical requirements 4. Telepresenter
5	Telemedicine guidelines by the national medical council, India[26]	1. Presence of caregiver mandatory for teleconsultation with minors (those whose age is below 16 years) 2. No mention of any other specific issues related to children

Abbreviations. RANZCP: Royal Australia New Zealand College of Psychiatry, ATA: American Telemedicine Association, AACAP: American Academy of Child and Adolescent Psychiatry, APA: American Psychological Association.

permitting online practice can be viewed as creating an additional barrier. Nevertheless, it is felt that proper training will help to address the novel components in telepsychiatry, like doing a physical or mental status examination via digital interaction. Financial considerations have also been important in the practice of telepsychiatry. Most health care expenditure is through commercial and government-funded health insurance programs that are administered through managed care entities. Similar to the regulations, the coverage of telehealth as part of the insurance benefit is a significant factor for providing and accessing telepsychiatry care.

Despite technological advances, there is a significant digital divide between urban and rural areas across many regions in the USA. The broadband internet connection and high-speed phone data services are still not available in many areas resulting in the population being unable to access telehealth. Even if there is connectivity, the affordability to pay for the services and devices will limit the ability of many underserved and less privileged families. There are several programs through community and government partnerships for digital connectivity to bridge this gap.[34]

In order to address the fundamental issue of workforce shortage and overall sustainability of mental health delivery, telepsychiatry is now being utilized for different models of workforce development such as collaborative and integrated care, peer-to-peer consultation, school-based telepsychiatry, and learning collaboratives using "hub and spoke" models.

Before Coronavirus disease-2019 (COVID-19) there was significant variability in the state-specific rules about the type of services provided (outpatient care), technology requirements (legacy systems), site or location of service (clinical setup), and the type of providers (only psychiatrists and psychologists) who could engage in the use of telepsychiatry for treating children. Depending on the state, it was also mandated to have an in-person visit before initiating medication management. There were also federal restrictions on prescribing controlled substances such as stimulants used for attention deficit hyperactivity disorder and benzodiazepines based only on telepsychiatry visits. The rules of confidentiality and patient privacy, as described in the Health Insurance Portability and Accountability Act (HIPAA) for health care, also applied to any care delivered using telehealth, thus limiting the use of commonly available technology. These different rules were often considered restrictive for the rapid adoption and scalability of telepsychiatry. The regulatory flexibility by temporarily waiving of these rules during the declared COVID-19-related emergency demonstrated that telepsychiatry is not only scalable quickly but also one of the most important modality for continuity of care for the most vulnerable patients during the pandemic. Whether the regulatory changes will continue is yet to be determined, but the continued expansion of telepsychiatry is certain.[35]

Experiences and Evidence-Base in the Indian Context

Pediatric telepsychiatry has been more recent, with evidence-base being very limited in the Indian context. Following are the experiences in the Indian context:

- Malhotra et al.[36] developed the Clinical Decision Support System for the diagnostic evaluation of children. This team proposed the term "tele-enabling model" for their novel model of service delivery.[37]
- Balasinorwala et al.[38] reported the feasibility of telepsychiatry service in the asynchronous mode. A total of 16 patients (17 %) of those who availed the service were children.
- The Virtual Knowledge Network (VKN) at the National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru, has been using a similar approach for training primary care providers.[39] The first certificate course in child and adolescent psychiatry focusing on neurodevelopmental disorders (NDDs) was launched in June 2019 and is now nearing completion. As part of this course, child mental health professionals at NIMHANS carried out an introductory training in various aspects of NDDs, for about 38 primary care physicians in the state of Chhattisgarh. Case presentations by the trainees replaced didactics to facilitate self-learning and real-time application of the knowledge gained. Such programs do not aim to develop expertise; instead, the goal is to develop skills for early identification of child psychiatric disorders, initiate a first-level response, and organize appropriate multidisciplinary referrals. Screening done by primary care physicians helps to provide timely intervention to the needy.
- Several children and adolescents require psychotropic medication alongside psychosocial interventions for adequate management of their behavioral/emotional concerns. As per the Indian telemedicine guidelines, 2020, except methylphenidate which comes under schedule X class of drugs, other psychotropic medications can be prescribed to children through a teleconsultation by a qualified psychiatrist.[26] At least in the initial few weeks of starting medication, children/adolescents need to be monitored, vis-à-vis specific side effects that may become particularly worrisome in some cases in this population such as behavioral activation with selective serotonin reuptake inhibitors, hepatic complications with atomoxetine, and blood pressure changes with clonidine, besides adequate parental supervision for the administration of medication. A liaison with an accessible medical setup must be ensured for timely monitoring.

Challenges in Pediatric Telepsychiatry

A detailed history and mental status examination are perhaps the best tools available for psychiatric diagnostics.[40] During the examination, a psychiatrist not only listens to the verbal responses from a patient but also observes general appearance and behavior, facial expressions, nonverbal gestures, and psychomotor activity. Mediation by a telecommunication channel (videoconferencing) restricts the psychiatrist's observational field to verbal responses and, to some ex-

tent, facial expression. Clinical challenges in telepsychiatry perhaps emerge from this fundamental structural limitation, besides technological barriers that may exist for both the patients and the service providers. The provision of psychiatric care via telecommunication technology typically arises in atypical circumstances, such as the current COVID-19 pandemic that has unprecedentedly reduced outpatient attendance across medical services in the country. This often results in inadequate preparation for a reasonable delivery setup, vis-à-vis the large population to be catered. We discuss here technological and clinical barriers in the practice of telepsychiatry, with a specific focus on issues of children.

Technological Barriers

Unlike an informal video call, videoconferencing for clinical purposes requires attention to the knowhow of various app functions (e.g., operating audio-video settings, and lighting, room arrangement).[41,25,35] Issues with gaze angle, distortion in the on-screen display, and transmission delay can impede free communication flow between the psychiatrist and the patient.[41] The psychiatrist also needs to adjust to appropriate "webside manners," by voice and expression modulation.[35] Inadequate technical support and a lack/limited availability of telepsychiatry competencies are frequently perceived barriers by clinicians.[41,42,43] The Indian telemedicine guidelines allow practice using modalities like telephone, video-calling, and even via texting.[26] Children and adolescents may show more interest in these varied modalities.[44,45] However, like that in in-person consultations, constant adult support and supervision will be required right from scheduling an appointment, to the call setup, to ensuring regularly scheduled contact with the service provider.

Clinical Challenges

During telepsychiatric consultations, clinicians tend to perceive a lower quality of rapport, satisfaction, alliance, and comfort than patients.[46] Perhaps for patients and families, the benefits of telepsychiatry—lower travel expense, getting help from the comfort of their homes, reduced waiting time since online appointments can be scheduled with better time regulations, not having to miss school in order to travel for the consultation outweigh any possible reduction in clinical care quality. Children with conditions like autism spectrum disorder, posttraumatic stress disorder, or social anxiety disorder, may show better comfort during teleconsultation than when in in-person consultation.[47] Besides psychiatry has long moved from "praecox" diagnoses to using structured assessment instruments that can very well be administered over telecommunication. However, clinicians sense the lack of gestalt from an in-person consultation, especially in therapeutic settings. Patients need to be periodically assessed for the suitability for continuing telepsychiatric care.[48] The evidence base to inform telepsychiatric practice is still evolving, and clinicians must rely mostly on their best judgment to dictate the appropriateness and sufficiency in a particular case.[26] A significant impetus for a governmental interest in nurturing telemedicine is to expand health care accessibility in remote and rural areas. In psychiatric practice, perhaps more than in other medical fields, because of the heavy reliance on verbal information, clinical challenges amplify when psychiatrists are called upon to see children and adolescents, elderly patients, and patients in geographically and culturally distant areas that may have varied colloquial expressions and idioms of distress.[49] Issues of privacy, safety, confidentiality, and boundaries, for both the clinician and the patient, require specific attention in telepsychiatry. These are pertinent issues for adolescents, especially, who may be wary of their family members' involvement with or access to a telecommunication exchange with the psychiatrist. These issues also gain prominence in the disclosure of abuse and therapeutic work thereof. Telepsychiatry is not just about using any internet-enabled device. It is crucial to ensure that the device is being used from a secure physical and web location, unlikely to be disturbed or accessed by others. Definite plans for session structure, consent/assent procedures that cover disclosure of abuse, SOPs for reporting and continuity of care (especially choosing between continued telepsychiatry or a shift to in-person care), could be essential aids for the child and adolescent psychiatrist when it comes to dealing with sensitive issues like child sexual abuse. In such scenarios, it would also be important to adhere to a multidisciplinary approach in order to have ready access to collaboration with clinical psychological, social work, legal, and other services.

The ease and pace offered by technology come with the flipside issues of social isolation and technology burnout, especially for clinicians who may have to spend substantial working hours over the internet depending upon their telepsychiatric engagements. This may add to reluctance in the psychiatrist to engage in this new modality of care. Clinical scenarios, such as aggression, self-harm, intense affective, or psychotic states, are not amenable for telepsychiatric care. Health-facility based care for these has to be stated a priori to every patient seeking telepsychiatric care. Assessments in child and adolescent psychiatry are typically multisession, multi-informant, and multiformat.[50] The diagnosis of behavioral and emotional issues in children and adolescents typically crystallize out of a series of meetings with the young person and significant others where a psychiatrist spends time trying to understand and decode the multiple influences in a child's life and the likely clinical consequences. Can a telecommunication platform duplicate this process? Depending upon the age of a child, a psychiatrist uses multiple techniques—play-based, projective, joint activities—to develop rapport and facilitate an expression of emotional distress. With the limitations in the field of view and modalities of engagement, creative solutions need to be devised to replicate these processes via telecommunication.

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Telepsychiatry and Addiction Treatment

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ABSTRACT

The need and the importance of telemedicine has been brought to the forefront during the ongoing pandemic of COVID-19. It has created another viable option for treatment delivery while reducing risks. However, there are major concerns regarding the delivery of services for treatment of substance use disorders using telepsychiatry. We discuss the various concerns and opportunities, the different international practices, and the Indian guidelines. We believe that there needs to be a balance between access to treatment and medication with reasonable checks and call for more patient and provider friendly practices. We also propose certain modifications in the Indian Telepsychiatry Guidelines.

Keyword: Addiction, drugs and society, psychiatry, telemedicine/telecare

The World Health Organisation (WHO) defines telemedicine as The delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for the diagnosis, treatment, and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities.[1]

Four elements are germane to telemedicine:

1. Its purpose is to provide clinical support and education.
2. It is intended to overcome geographical barriers, connecting users who are not in the same physical location.
3. It involves the use of various types of ICT.
4. Its goal is to improve health outcomes at the level of individual patients and/or communities.

Telemedicine offers the potential for enhancing treatment and recovery of people who suffer from substance use disorders (SUD). The use of telemedicine in this field is still limited but growing and is the need of the hour.

The coronavirus disease (COVID-19) pandemic has spurred professional bodies, administrations, and jurisdictions to adopt newer technologies for delivering health care services. However, with regard to the treatment of People Who Use Drugs (PWUD), the pandemic and the techniques that could be used to address the challenges present unique problems.

These problems include, but are not restricted to, the following:

- Patients with SUD have greater risk of contracting the coronavirus.
- Comorbid conditions.
- Issues related to misuse and diversion of medications.
- Access and availability of licit and illicit substances and essential medicines.
- Issues related to the protection of patients and health care providers from infection.
- Issues related to privacy confidentiality and, of course, the stigma and discrimination associated with addiction.[2]

As a response to the pandemic, The Ministry of Health and Family Welfare, Government of India, issued the Telemedicine Guidelines in March 2020.[3] Subsequently, the Indian Psychiatric Society and the Telemedicine Society of India, in collaboration with NIMHANS, brought out the *Telepsychiatry Operational Guidelines—2020* in May 2020.[4] These documents help to generate wider discussion about telemedicine and legitimize it as a credible method of treatment delivery. However, on closer scrutiny, it is apparent that these guidelines do not adequately address the issues related to the treatment of addiction, as we shall elucidate later.

Barriers to the Use of Telepsychiatry

A recent review on the barriers to the use of telepsychiatry by Cowan et al.[5] has extensively discussed the concerns and hurdles in the use of telepsychiatry. While it is not possible to elaborate on all the points, in general, barriers to the use of telepsychiatry can be both from the clinicians' and patients' perspectives. These include the following.

- Concerns about satisfaction, alliance, rapport, and comfort: There are concerns raised regarding the efficacy and quality of telemedicine, difficulty in building rapport, and lower therapeutic alliance. However, in general, some of the benefits reported were improved access to care and reduced waiting periods, travel time, and cost. Patients also report increased satisfaction with telepsychiatry.
- Cultural and communication gaps and differences in values, especially in a vast and diverse country like ours: There are cultural, language and regional barriers, and differences in value systems, especially in a vast and diverse country like ours, and that may impact the quality of services.
- Patient privacy, security, boundaries, and safety: These concerns include access to information, health data, network issues, encryption, issues of self-harm, emergency or crisis during sessions, and lack of support or local resources.
- Barriers related to technology: A well-functioning, robust system with good audio-visual quality and technical support is essential for the practice of telepsychiatry.
- Limited evidence base: Telepsychiatry is hampered by the limited research on its effectiveness in clinical practice.
- Financial viability: These include concerns regarding the cost of technology, reimbursement, insurance coverage, etc.
- Issues of licensing and credentialing: Some states and countries may require an exclusive license or accreditation in telepsychiatry before permission to practice.
- Legal/regulatory issues: These include problems related to prescription of controlled medication, differences in specific local laws, jurisdiction in civil commitment, and insurance requirements.
- Concerns of liability, litigation, and malpractice.
- Concerns of tradition, habit, routines, and workflows: These include often neglected problems of loss of efficiency, scheduling outside of regular times, investment of time and energy, special arrangements for telepsychiatry, and changes in protocols and procedures.

In addition, treatment for PWUD presents other unique problems concerning controlled substances such as the validity of the prescriptions within and across jurisdictions (for controlled medicines, different state, and excise laws); establishing identity in clinics and hospitals; registration of premises—old, new, and temporary (some states have special rules for registration of deaddiction facilities); concerns about emergency delivery sites; registration of satellite/community/mobile sites; issues related to supply and transport of controlled medications; concerns regarding dispensing and refill of prescriptions including the dose and duration of prescriptions and refills; diversion, abuse, overdose, relapse, and retention in treatment; and finally, issues related to record-keeping, documentation, and filing of reports and returns. The above concerns are serious since the laws dealing with controlled substances are exceptionally stringent.

As we have discussed, there are challenges at multiple levels in providing services through telemedicine to PWUD.

Recommendations for Telemedicine During General Practice and During the Pandemic

Canadian Research Initiative in Substance Misuse (CRISM) has issued general recommendations for telemedicine.[2] we extract the relevant points for our purpose.

1. Telemedicine can be practiced if: (a) the health care provider evaluates that telemedicine is appropriate, (b) the patient provides informed consent, and (c) both the health care provider and patient have the proper technological means to use telemedicine. The risks and benefits of providing care by telemedicine compared to providing care in-person should be assessed.
2. The tools (telephone and video conferencing), platforms, and data used during telemedicine must be secured and confidentiality of the consultation must be maintained. Patient consent can be obtained verbally unless written consent is required at the sign-up of the tool/platform being used.
3. Patient identification must be provided at each telemedicine consultation, including name and at least one of the following: date of birth, address, health card number, or another valid form of identification

(which can also be displayed on the screen). The health care provider's documentation should include the same elements as a regular note, while also indicating the reason and method for providing telemedicine.

4. During a pandemic, it is recommended that health care providers always consider using telemedicine to provide care whenever possible. Each patient's eligibility for telemedicine should be reviewed individually. Prescriptions should be transmitted verbally, electronically, by fax, or via secured electronic medical record to protect pharmacists, patients, and pharmacy employees from the transmission of COVID-19 by reducing visits to the pharmacy.

Telepsychiatry for SUDs: International Practices

It would be worthwhile to elaborate on some of the international practices with regard to the provision of telemedicine services to PWUDs. We would restrict the discussion to practices explicitly related to addiction psychiatry and not to general issues of telepsychiatry (such as tools and privacy).

As far as opioid agonist treatment (OAT) is considered, CRISM has suggested the following guidelines:

- The renewal/re-induction of OAT is allowed by telemedicine when indicated as per standard of care guidelines. OAT can be initiated by telemedicine in situations where the prescriber judges that a delay in the start of OAT would entail a risk for the patient, and if conditions are appropriate. All patients are encouraged to obtain a take-home naloxone kit.
- Health care providers should provide increased support to patients via remote methods and maintain ongoing and open communication. Online resources should be offered to patients, and increased counseling services by phone or other platforms should be offered.
- Pharmacy delivery should be used if available, and authorized/ designated agents can be used to pick up or receive carries.

CRISM recommendation for other specific medications are as follows:

- Benzodiazepines and psychostimulants: A health care provider may prescribe benzodiazepines or psychostimulants to a known patient via telemedicine if he ensures follow-up—either in-person or by telemedicine. In the case of a new patient, the health care provider is permitted to prescribe it by telemedicine if they judge and document in the medical file that it is medically indicated, and a delay in initiating treatment will entail a risk to the patient. Appropriate and timely follow-up must be carried out, either in-person or by telemedicine. For all patients, the prescribed quantity must be safe and the patient's condition and the associated risks must be taken into account.
- Opioids: Opioid prescriptions may be renewed following a telemedicine consultation, according to the professional judgment of the prescriber. While doing so, the following issues may be taken into account: each patient's needs; the fundamental concerns of stability, safety, and storage; overdose risk; diversion risk; lapse or relapse; the new dangers associated with COVID-19; and current public health advice around physical distancing. The initiation of OAT is authorized by telemedicine consultation only when the health care provider judges that a delay in the start of the treatment would entail a risk for the patient.

The Drug Enforcement Division (DEA) in the US has also issued extensive guidelines for the use of controlled substances during the COVID-19 emergency period. These include detailed instructions for prescriptions, registration of temporary sites, alternate delivery sites, alternative delivery models, increase in drug supply, telemedicine, medication-assisted treatment including buprenorphine and methadone, and record-keeping and reports. A detailed discussion of these are beyond the scope of the article. Suffice to say, a balance has been maintained between ensuring the availability of medicines for such patients while minimizing diversion and misuse. Importantly, waivers have been given to various conditions that would facilitate the supply and use of these medicines to patient benefit. More information can be obtained from the DEA's Diversion Control Division website.[6]

Similarly, the American Society of Addiction Medicine (ASAM) has issued guidelines called "Supporting Access to Telehealth for Addiction Services" that include access to buprenorphine and methadone, access to telehealth, and access to alcohol use disorder and alcohol withdrawal management services. Again, these guidelines have kept in mind the unique problems faced during this pandemic, and facilitate the treatment and recovery of patients.[7]

The Substance Abuse and Mental Health Services Administration (SAMHSA) in the US has ensured the provision of buprenorphine and methadone for both new and existing patients with certain exceptions.[8] The salient points are as follows.

- For new patients: Exemption from the requirement to perform an in-person physical evaluation using telehealth for buprenorphine but not for methadone.
- Permitting practitioners to continue to treat existing patients on both buprenorphine and methadone using telehealth meeting applicable standards of care.
- Allowing practitioners outside opioid treatment programs to treat both new and existing patients with buprenorphine using telehealth facilities.
- Permitting OTPs to dispense medication (either buprenorphine or methadone) up to 14–28 days depending on clinical stability.

Recently, a position paper titled "COVID-19 and substance use disorders: Recommendations to a comprehensive health care response" by the International Society of Addiction Medicine (ISAM) Practice and Policy Interest Group has advocated more liberal policies facilitating better access to treatment for patients suffering from SUDs.[9] Specific detailed steps regarding the provision of treatment, medication, and services during different stages and populations have been elucidated.

Indian Guidelines

In India, the *Telemedicine Practice Guidelines* were issued in March 2020,[3] and the *Telepsychiatry Operational Guidelines—2020*[4] were published in May 2020. These documents legitimize telemedicine as a credible option for service delivery. The purpose of these guidelines is "to give practical advice to doctors so that all ser-

vices and models of care used by doctors and health workers are encouraged to consider the use of telemedicine as a part of normal practice."

The guidelines define teleconsultation methods, types of consultations (first and follow-up consultation), and post-consultation approach by treatment providers. Besides, there is a section that divides medication which can or cannot be prescribed through telepsychiatry practice into certain groups List A, B, and C. Importantly; it needs to be noted that the categories (List O, A, B, and C) of medicines that can be prescribed via teleconsultation are expected to be as notified in consultation with the central government from time to time. It is to be clarified that the Telemedicine Guidelines provide general guidance while the specific list of drugs are mentioned in the *Telepsychiatry Operational Guidelines—2020*. For the sake of completeness, we will briefly elaborate on the category of the drugs.

1. **List "O" drugs:** Over-the-Counter drugs are those that do not require, by law, a prescription from a doctor to be sold.
2. **List "A" drugs:** List-A medications are those containing relatively safe medicines with low potential for abuse. These medications can be prescribed during the first/new consult via video consultation only, and for tele-follow-up consult, any mode of consultation is allowed (text/audio/video) for refilling the medications.
3. **List "B" drugs:** The List-B includes "add-on" medications, which are used to optimize an existing psychiatric condition. This list is dynamic in nature and depends on central government notification and the introduction of new molecules into the market. The medications under List-B can be prescribed in tele-follow-up consultation only, and it can be in any mode (text/audio/video).
4. **List-"C" drugs (prohibited for online prescribing):** These are the psychotherapeutics drugs/medicines which are prohibited to be prescribed during telepsychiatry consultation. They include those which are especially regulated under the following regulations:
   a. Schedule X of Drugs and Cosmetics Act (D&C Act), 1940, and Rules, 1945
   b. Narcotic and psychotropic substance listed in the Narcotic Drugs and Psychotropic Substances Act, 1985 (NDPS Act, 1985)

In the context of treatment of SUD, the concerns are as follows:

- The issues of accessibility and availability of medicines for the treatment of SUD have not been addressed adequately. As an example, the duration and take-home doses of medication need to be increased to avoid unnecessary traveling in stabilized patients. Alternative sites can also be provided for dispensing.
- The distinctive problems faced by patients with dual diagnoses (SUD along with other mental illnesses) also have not been adequately addressed. Such patients have special needs for the treatment of both mental illness and substance dependence. The restricted or differential availability of medications may hamper recovery.
- The medicines in List A (as per the details in the *Telepsychiatry Operational Guidelines—2020*)[4] are not exhaustive and are specific for a particular program of the government (District Mental Health Program). These cannot be generalized to all practitioners working in different setups and are unduly restrictive.
- The distinction between prescription, stocking, and dispensing is unclear. The registered medical practitioners have the right to prescribe, stock, and dispense medications as per law. However, some of these medications are unavailable with chemists despite being permitted. So, the prescriptions may not be honored. Although it has been alluded to in section 7 (Prescribing Medications Online in Psychiatry), but these have been restricted in section 7.2. Although it is mentioned that prescriptions are on the professional discretion and judgment of the practitioner, certain medications are prohibited for a prescription. These are mainly controlled medications used frequently by patients of substance dependence.
- In Section 7.3, the medicines in List B are for "ADD ON" and "FOLLOW-UP" only. These medications may need to be started in the first consultation itself for maximal patient benefit. These may affect the right of the patient to effective treatment.
- In Section 7.4, List-C drugs are prohibited as they fall under the NDPS Act, 1985, and Rules, 1985, and D&C Act, 1940, and Rules (DCR), 1945.

Controlled Medications

We believe that this (prohibiting online prescription of some important medications) is a major area of concern. The NDPS Act has been misunderstood and misinterpreted to construe medications as if they are banned. In fact, the NDPS Act and the Rules not just *permit* the *use of medications for medical and scientific purposes* but actually encourage it. It is universally accepted that the supply of these medicines for SUD patients constitutes a medical purpose as defined in the *act and rules*. The same is true for the medicines listed in D&C, 1940, and Rules, 1945. The inclusion of medicines in various regulations (NDPS Act, D&C Act) also does not prohibit the right of prescription by a psychiatrist. Indeed, this particular right has been bestowed upon the psychiatrists after they obtain the due qualifications and registration under the prevailing Medical Council of India/National Medical Council rules. The telepsychiatry system so envisaged while facilitates the provision of treatment and care for patients with a wide variety of mental health concerns, unfortunately, may inadvertently create many hurdles for those with SUDs. There is an implicit assumption on the Telemedicine Guidelines 2020 that these medications will only be abused or misused while neglecting the important therapeutic uses of these medications without providing any logic, rationale, or data to back its proposal. This stigmatizes the patients of SUD by doubting their intentions for taking treatment while turning away potential seekers who may wish to start treatment. Also, there is no scope given for a case-by-case evaluation of such patients who may warrant such medications. We believe that a balance needs to be maintained rather than unnecessary and potentially dangerous overregulation. These regulations may cause a risk of relapse and overdose, greater emergency visits, risk of infections due to change of drug/route, and increased crime/violence/other social and legal problems.

We strongly believe that this is a time to think out of the box and not be overcautious to the extent of restricting care for those in need. This crisis is an opportunity to enhance access to care for all those patients who, for some reason, could never approach a psychiatrist for SUD. The current guidelines appear too restrictive. The explicit prohibition on prescription and dispensing essential life-saving medications without a clear, rational basis may hamper the recovery process in substance dependence patients besides increasing the stigma and discrimination that these patients suffer. Many patients may drop out of the therapeutic network leading to an increase in morbidity and mortality. We should not miss this opportunity to address the major public health burden posed by restricted access to the treatment of SUD.

To achieve this, we put forward the following suggestions:

1. Medicines that are indicated as anticraving agents for SUD may be included in List A, which include oral formulations of baclofen, pregabalin, acamprosate, and topiramate.
2. Tablet naltrexone needs a special place on List A as a medication that can be used as an anticraving agent for alcohol and can be prescribed to patients already on naltrexone therapy for opioid dependence.
3. Tablet disulfiram, after proper informed consent in the first face-to-face consultation, may be allowed to be prescribed for patients with ongoing treatment through telepsychiatry.
4. Oral lorazepam has been widely used for alcohol withdrawal management. Considering its advantages and efficacy and even though it falls under the NDPS Act, based on available evidence as well as clinical utility and safety profile, we advocate for its use through telepsychiatry from the first face-to-face consultation onwards.
5. A large number of patients suffering from opioid addiction will require buprenorphine and methadone as ongoing Opioid Substitution Treatment regimen. As the whole COVID-19 scenario is also a special circumstance, we as a fraternity should not refrain from any decision or policymaking which can directly benefit our patients. We need controlled, monitored, and documented use of buprenorphine and methadone on an e-prescription basis.
6. Pharmaceutical products for tobacco dependence, including bupropion and varenicline, are neither addictive nor under any legal restriction and should be made extensively available. Such agents will help the patients of nicotine dependence, especially during the ban on tobacco products during COVID-19.

Conclusions

Telemedicine has become a viable method of service delivery, especially in these difficult and testing times. It provides many opportunities while reducing risks for both the patients and the treatment providers. However, there are many unique concerns and challenges in the application of telemedicine in SUD. These concerns, if left unaddressed, may hamper recovery in patients of these disorders. We call for more patient-friendly approaches and urge the policymakers and the regulatory authorities to make amends in the existing guidelines and laws to facilitate this.

Declaration of Conflicting Interests

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Telerehabilitation in Psychiatry

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ABSTRACT

The COVID-19 pandemic has interrupted the usual mechanisms of healthcare delivery and exacerbated symptoms of mental illnesses. Telemedicine has morphed from niche service to essential platform, with newly released guidelines that cover various aspects of tele-mental health delivery. Rehabilitation services, which incorporate a range of psychosocial interventions and liaison services, have been significantly impacted too. They are currently more institute-based than community-based in India. However, recent legislation has mandated that community-based rehabilitation options be available. While a large treatment gap for mental health issues has always existed, telemedicine provides an opportunity to scale services up to minimize this gap. Community-based rehabilitation can be delivered over various platforms, from text to phone to videoconferencing, and various devices. Telemedicine is cost-effective, and enables delivery of services where existing services are inadequate. The recent guidelines allow other healthcare workers to be involved in mental health service delivery. Hence, in addition to direct delivery of services, telerehabilitation can facilitate task-shifting, with mental health professionals mentoring and supervising existing human resources, such as ASHA workers, VRWs, DMHP programme staff, and others.

Tele-rehabilitation also poses challenges - not all needs can be met; access and privacy can be a problem in resource-scarce settings; liaison with existing services is required; and organisations need to plan appropriately and re-allocate resources. Digital access to welfare benefits and interventions must be expanded without disadvantaging those without internet access. Yet, many rehabilitation interventions can be adapted to telemedicine platforms smoothly, and task-shifting can broaden access to care for persons with disability.

Keywords: Community psychiatry, rehabilitation, telemedicine/telecare, telerehabilitation

The COVID-19 pandemic has imposed change in most aspects of daily life and interrupted the regular delivery of health care. One of these changes is that telemedicine has accelerated from a niche service into an essential platform. This crisis has galvanized the release of guidelines for telemedicine,[1] telepsychotherapy,[2] and telepsychiatric social work practice[3] in India. While created during COVID-19, these new guidelines have broad implications for mental health care delivery beyond the pandemic. These changes will not only continue to impact the care and rehabilitation of persons with disabilities (PwDs) but also raise new questions about how these services can be optimally delivered. This article explores how in today's context, telemedicine can be tapped to provide rehabilitation services (i.e., telerehabilitation).

Rehabilitation in Psychiatry

Disability results from the interaction among the effects of illness, the environment a person lives in, and personal factors.[4] Effective health services seek to minimize disability by addressing all these factors together. Psychiatric rehabilitation follows this theme and aims to help "persons with long-term psychiatric disabilities increase their functioning so that they are successful and satisfied in the environments of their choice, with the least amount of ongoing professional intervention."[5] A related term, "recovery," ties the focus of services explicitly to the perspective of persons with mental illness (PMI) and their search for meaning and purpose.[6] Thus, rehabilitation services must be personalized to each individual and help them obtain their unique goals. It is, therefore, imperative that PMIs, families, and caregivers should participate in the planning and implementation of these services. Ideally, the multidisciplinary teams providing the services should include psychiatrists, clinical psychologists (CPs), psychiatric social workers (PSWs), psychiatric nurses, and occupational therapists, who can collaborate to achieve common goals. In resource-sparse settings, these services may have to be delivered by other trained personnel, including peer specialists, who are persons in recovery with lived experience of mental illness. There are myriad resulting interventions that range from engaging PMI in clinical services to the ones that strive to empower PMIs to participate fully in community life. The latter includes supported education, supported employment, supported accommodation, case management, access to welfare benefits, and liaison with a range of stakeholders for accessing community support.

Worsening of the Treatment Gap

PMIs have been significantly impacted by COVID-19 pandemic, with symptom exacerbations and decreased access to mental health services, leading to relapses. Treatment for medical comorbidities has also been affected, resulting in overall worsening of health conditions like diabetes for example.[7] Furthermore, the pandemic has been linked to worsening in anxiety and depressive symptoms,[8] concerns about stigma, and suicide.[9–11] COVID-19 and measures to mitigate it (e.g., lockdowns and social distancing) have disrupted routines of people with developmental disorders as well as their caregivers. Some PwDs could even experience the loss or incapacitation of a caregiver. Significant numbers of PwDs have experienced reduced access to clinical services, instead of the expansion of services that their care and rehabilitation requires. Overall, there is a widening of the treatment gap, which was substantial even before this pandemic. In India, mental illnesses have treatment gaps of greater than 60%; disability estimates across different domains (work, social, and family life) exceed 50% in those with severe mental illnesses.[12] The World Health Organization (WHO) indicates

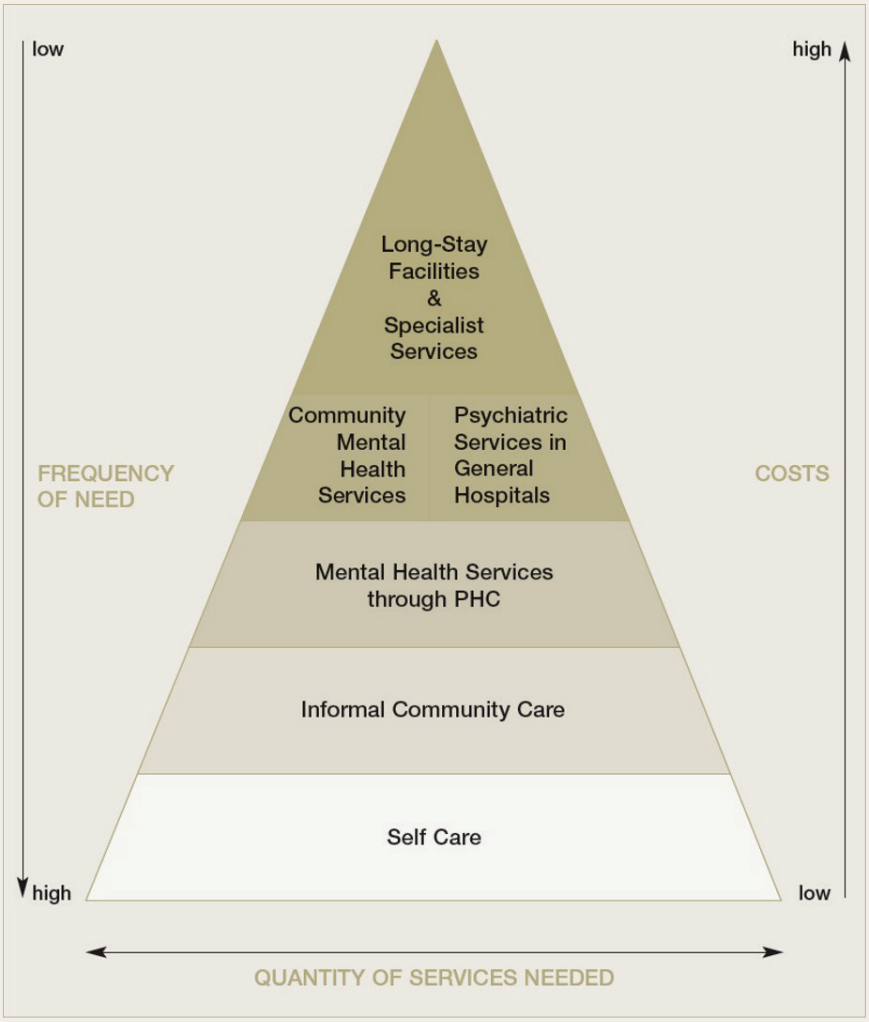
that the cost of services for mental health care through primary care services, psychiatric services in general hospitals, and community mental health services is lower than that of long-stay and specialist services. In this reality, resource-scarce settings should focus on the base of the WHO Mental Health Service Organization pyramid (**Figure 1**),[13] with the common goals of enabling PwDs, especially those with severe mental illness, to live in communities and experience equal participation.

Significance of Community-Based Rehabilitation

In India, rehabilitation services are mostly institute-based and include daycare services, skills training centers, residential facilities attached to hospitals, halfway homes, and long-stay facilities. Recent Indian legislation—specifically the Rights of Persons with Disability Act, 2016, and the Mental Healthcare Act, 2017—has codified the rights of PwDs to access to community- and home-based rehabilitation.[14,15] Community-based services focus on continuity of care and coordination with locally available resources. The staff of the District Mental Health Programme (DMHP), doctors, nurses, and the Accredited Social Health Activists (ASHAs) of the Primary Health Center (PHC) address the health care needs of the PMI. Nongovernmental organizations (NGOs) can empower patients and caregivers through self-help groups, mobilization of aid from local governmental organizations (GOs), skills training facilities, and livelihood opportunities.

FIGURE 1.

WHO Service Organization Pyramid



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A host of other grassroots programs and staff working at different levels in communities can provide rehabilitation inputs with professional supervision; these include vocational instructors, village rehabilitation workers, community health workers, etc. For effective rehabilitation, these stakeholders should collaborate to address the domains put forth in the community-based rehabilitation (CBR) matrix, namely health, education, livelihood, social needs, and empowerment (**Figure 2**).[16]

Role of Telerehabilitation

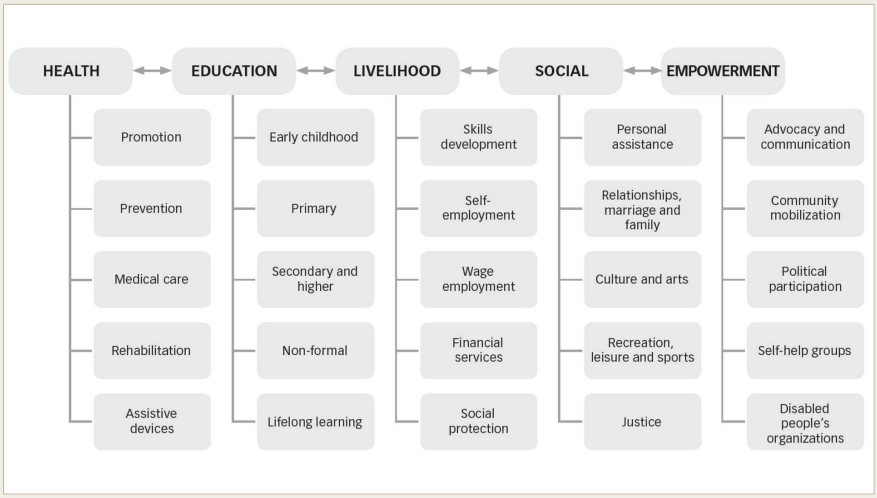
To implement a CBR approach effectively, we need to expand the reach and capacity of available human resources, with one solution being task shifting. Telerehabilitation can be defined as a spectrum of services that facilitate rehabilitation, or recovery-focused services, using telecommunication and internet-based communication services. In addition to delivering services directly, it can be used to build human resources and foster task shifting in communities that lack the personnel to offer these services. Rehabilitation services serve PMIs better when they are integrated with clinical services.[13,17,18] Thus, changes in rehabilitation must parallel corresponding changes in mental health care delivery. Some areas in which telerehabilitation may play a role are as follows:

- Telemedicine
- Telepsychotherapy
- Telepsychiatric social work and liaison
- Supervision of home-based rehabilitation
- Training and mentoring of grassroots workers by experts

Teleconsultations with rehab staff can help clients in gainful engagement, activity scheduling, skills training, and monitoring of progress toward goals. Some activities can be adapted for online groups. Long-term engagement and adherence are two important aims of any intervention, whether clinical or rehabilitative. A pilot study from an Indian tertiary care center has shown that this type of aftercare was acceptable, satisfactory, and associated with adequate privacy for patients recently discharged from the hospital.[19] The mobile telepsychiatry service from the Schizophrenia Research

FIGURE 2.

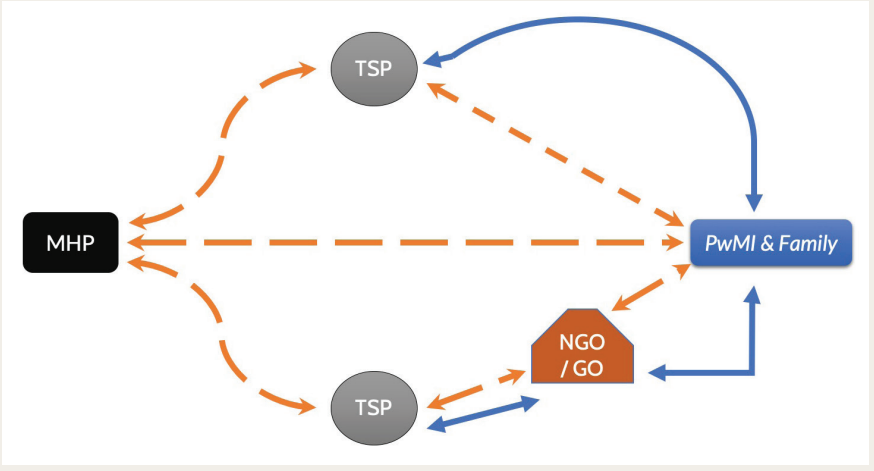
The World Health Organization's CBR Matrix



Source: Reprinted from community-based rehabilitation: CBR guidelines. Khasnabis C, Motsch, KH, Eds. Introduction, p. 25, Copyright (2010).

FIGURE 3.

Methods of Outreach Using Teleservices



MHP: mental healthcare provider, TSP: healthcare worker who is trained in task shifting, PMI: persons with mental illness. solid lines: direct interactions, dashed lines: interaction via telecommunications platforms.

Foundation (SCARF) comprises a bus with an onboard consultation room and a pharmacy, connects with a psychiatrist in Chennai over wireless internet, and maintains electronic health records. The intervention also includes community health workers who deliver psychosocial interventions, including psychoeducation for caregivers.[20]

SCARF described their pioneering telepsychiatry services in the southern state of Tamil Nadu, based on their community outreach program, in 2008 and identified key elements: a suitable technology; a convenient location, with local collaboration; building human resources and awareness; establishing peripheral telepsychiatry centers and ensuring case documentation; and accountability.[21] The authors also emphasized the need for an Indian telemedicine act and regulatory authority. The Indian telemedicine practice guidelines,[1] a guideline for telepsychotherapy services,[2] as well as a guideline for telepsychiatric social work (tele-PSW)[3] offer frameworks for rehabilitation services to expand their reach. A common feature is allowing the utilization of any platform or software. This frees providers and service users to use the optimal software accessible to both rather than expensive bespoke equipment or single platforms. These guidelines do not specify standards for data management and do not cover aspects such as research, continuing medical education, or remote surgical interventions. The three guidelines cover registered medical practitioners (RMPs), CPs, and qualified PSWs, respectively; the last one includes professional social workers who have been trained to deliver these online interventions. These guidelines could be used to enhance the DMHP and CBR services. Each DMHP team consists of a psychiatrist, nurses, a psychologist, and PSWs.[22] Based on these guidelines, all these health care workers can connect with specialist or tertiary care services and deliver effective care to patients who would not otherwise have access to these services. The tele-PSW guidelines allow for group therapies in open (used primarily for psychoeducational purposes) or closed groups, which are homogeneous or heterogeneous, where participants share specific needs. They cover areas such as working with communities, advocacy, networking, and continuity of care. They also address capacity-building and hands-on training. Notably, they enable supervision of home-based rehabilitation, especially when daycare and other services are closed or unavailable. Thus, these guidelines provide several ways to connect PMIs and caregivers to primary and specialist services (**Figure 3**). The different DMHP personnel could deliver a range of complementary telehealth services, both directly and indirectly: from treatment engagement services by the nurse to psychosocial interventions and group therapies by the psychologist and social workers to supervised consultations by PHC doctors overseen by the psychiatrist.

Indian telemedicine guidelines classify services according to (a) mode of communication (text, voice, video, etc.), (b) when information is transmitted between persons (real-time versus asynchronous responses), (c) stage of consultation (first-time versus follow-up consultations), and (d) individuals involved (patient to RMP, caregiver to RMP, RMP to RMP, and health worker to RMP). The last classification defines health workers as a "nurse, allied health professional, mid-level health provider, ANM, or any other health worker designated by an appropriate authority." The guidelines thus explicitly allow a variety of rehabilitation professionals and members of the multidisciplinary team to interact with psychiatrists or RMPs via telemedicine services. Tele-

medicine guidelines provide for caregivers to be involved in consultations with patients. They also allow consultations with caregivers without the client in cases where the patient is a minor or where the "caregiver has a formal authorization or a verified document establishing his relationship with the patient and/or has been verified by the patient in a previous in-person consult (explicit consult)." These measures will address the issues concerning confidentiality and consent.

The "Best Practices in Videoconferencing-Based Telemental Health," released by the American Psychiatric Association (APA) and the American Telemedicine Association (ATA), go beyond the Indian telemedicine guidelines in accepting the role of organizations involved in patient care, and it also guides specific clinical populations (geriatric age group, children and adolescents, etc.) who face different challenges (and opportunities) when using telemental health care services. Similar to the Indian guidelines, a recent notification from the U.S. Department of Health & Human Services allowed for "good faith provision of telehealth during the COVID-19 nationwide public health emergency" even if HIPAA privacy requirements—mandated by the APA/ATA guidelines—were not fully complied with.[23]

Evidence for Telemental Health Services

Reviews note that telemental health services are comparable to in-person services, in terms of reliability and treatment outcomes; are cost-effective, especially with a larger volume of patients, in isolated communities or those with limited professional resources; can involve nonprofessional providers to play effective roles in therapy.[24–26] Behavioral therapies delivered through telepsychotherapy are consistently found to be effective: it improves drug compliance, indicates better functional performance, reduces symptoms, and improves quality of life in those with medical comorbidities.[26] Likewise, telemental health services—including family and group services—are feasible across a spectrum of patients with special needs and across age groups, from children to the elderly to those who are incarcerated. Some advantages in the geriatric age group are avoidance of unneeded hospitalizations; reductions in travel time, fuel costs, physician travel time, and personnel costs;[27] and the potential to match cultural, ethnic, and language matching with providers. The APA telepsychiatry toolkit observes that certain patient groups (e.g., children and adolescents in the autism spectrum, patients with disabling anxiety) can show greater acceptance for telepsychiatry services.[28,29] Although telemedicine applications have been used for computer-based screening assessments, telephone-based recovery supports, and telephone-based therapy for addictive disorders,[30] its use is limited otherwise. Hence, app-based interventions for a variety of interventions from craving management to supervised medications require further consideration. Similarly, evaluation of many other aspects when using telemedicine is required like prescribing controlled drugs like buprenorphine, the ideal frequency of in-person and telemedicine-based monitoring of patients who are at risk of relapse, and the effectiveness of supportive therapies, including group therapies.[31]

Reach of Teleservices in India

A recent report estimated that India has more than 504 million active internet users above the age of 5 years;[32] internet penetration is around 40%, with rural sector growth outpacing the urban sector; users accessed the internet mostly on mobile devices (99%); nearly 70% of users accessed the internet daily. However, women have less access to internet access, and some families share devices. Overall, there is a rapidly growing user base to whom teleservices can reach today, even though access can always be further improved. Through a welcome move, the government has digitized applications and issue for disability certificates through the Unique Disability ID (UDID) scheme; several welfare benefits are also being disbursed through digital platforms. Currently, the UDID can only be issued by a medical board closest to the residence of PwD.

Experiences From an Academic Tertiary Care Center

In the National Institute of Mental Health and Neuro Sciences (NIMHANS), services have pivoted to deliver telemental health services during the COVID-19 crisis to ensure continuity of care for patients who were unable to avail outpatient services. The Psychiatric Rehabilitation Services unit temporarily closed its daycare services but connected with clients through telephone and videoconferencing-based consultations. A variety of needs were addressed like access to medicines (e-prescriptions, home delivery of drugs, free drugs for those in need, etc.), referrals for the treatment of medical comorbidities, financial support, liaison with employers, liaison with police for clients who went missing, and inpatient care for clients who required it. Community mental health services shifted from in-person consultations provided by mental health professionals at primary health centers to teleconsultations. A social worker coordinated follow-up consultations by working with the primary care doctor in one rural community service as he used voice and video-based consultation with professionals at NIMHANS. In another community service, a social worker coordinated follow-up teleconsultations between a patient or family member or a health worker with the psychiatrist at NIMHANS. Medications, as well as ration kits, could be delivered to remote areas by liaising with governmental and nongovernmental agencies and health workers who had travel passes during the lockdown period.

The Karnataka State Holistic Empowering Programme for Mental Ailments (KSHEMA) project, designed to address the rehabilitation needs of those with severe mental illness in rural areas, has begun in 10 taluks in Karnataka. Services will be delivered by social workers at the taluk level, under the supervision of a multidisciplinary team from NIMHANS, who would facilitate access to clinical services from the DMHP and local Primary Health Centers (PHCs). They focus on follow-up and liaison with medical officers and psychiatrists, and on access to disability welfare benefits. The project also seeks to build capacity by training and handholding the medical officers to treat persons with severe mental illnesses, so that clients may access help closer to home. Telemental health services will be used to connect with taluk social workers as well as medical officers to en-

sure that the continuity of care is maintained and that multiple rehabilitation needs are addressed. The project offers a glimpse of how to develop services that bring rehabilitation and recovery closer to clients, using teleservices.

Challenges and Limitations of Telerehabilitation

Telerehabilitation also has its challenges. There can be privacy concerns while accessing services. People may lack access to smart devices or computers, especially if multiple users use the same device, or may have difficulty using devices and software effectively. Daycare services fulfill different needs such as activity scheduling, socialization, building self-esteem, learning instrumental activities, making friends, mentorship, and hands-on training, which cannot be met via teleservices alone. Also, family members may find supervising home-based activities difficult. Expressed emotions and disclosure of symptoms may be different when PMIs pursue activities independently from their caregivers, a difficult need to address with telerehabilitation alone. Many organizations now face challenges of reviewing budget allocations, training their personnel, and realigning their patterns of work to deliver teleservices. Long-term institute-based services, which include halfway homes, long-stay homes, supported accommodation, and supported employment, have a prominent role for in-person delivery of services. However, teleservices can augment them through remote supervision of therapies provided by caregivers, liaison, and follow-up. These hold good for custodial settings for children who are in conflict with the law or in need of care and protection, as well as in other group settings such as orphanages and group housing facilities. In custodial settings such as prisons, while telepsychiatry can have greater potential to ensure access to services, the challenges—such as requiring buy-in from other prison staff; multiple reporting hierarchies for psychiatrists and other personnel; and a lack of contextual, day-to-day information about prison activities for telehealth professionals—must be planned for.[33] For some critical indications, e.g., clinical emergencies such as suicidality, in-person services are recommended.

Agenda for the Future of Telerehabilitation in Psychiatry in India

Rehabilitation services do not occur in a vacuum. India needs to extend the reach of its telecommunications infrastructure, with initiatives such as BharatNet for rural broadband to reach the neediest people. There is a need for modification of the UDID system for the government to fulfill its commitment to issue disability certificates from the facilities where the PwD is receiving care. Current guidelines do not allow psychological assessments such as assessment of intelligence quotient (IQ), specific learning disability, etc., to be performed via teleservices. This aspect may be appropriate as these activities need accurate in-person observations (such as eye gaze), regard for the specific psychometric properties of tests, confidentiality, and need for the calm environment during testing necessitate in-person assessment. However, studies show that in the case of videoconference-based evaluation of psychiatric symptoms by using scales like the Brief Psychiatric Rating Scale (BPRS), the Hamilton Depression Rating Scale (HDRS), and the Positive and Negative Syndrome Scale (PANSS), comparable results have been obtained to in-person assessments. These studies also observe that better bandwidth and video quality improve assessment accuracy, especially for scales that assess negative symptoms or depend on nonverbal cues.[34] The literature on social skills assessments is relatively sparse, though assessments and early interventions for autism have been shown to be broadly feasible and comparative to in-person services for some interventions, but more rigorously designed trials are required.[35,36] Further research into the feasibility and accuracy of different types of assessments—for clinical symptoms and disability—could help policymakers understand which of them can and cannot be done over a telepsychiatry platform; this could ease access to disability benefits for the neediest PwDs. Hence, accessing welfare benefits will require a mix of in-person services and telemental health services. How these will be delivered will vary with local conditions. In some places, the camp approach may work best, but in other areas where travel and access to facilities are limited, mobile units like the SCARF telepsychiatry mobile unit[20] may be better suited to reach out to PMIs. Governments must offer as many services as possible over telemental health services without disadvantaging those who lack access to digital services. The Central and State governments must also strive to allow for clients to remotely access benefits such as pensions and insurance, by using and improving the same protocols for identification that these telemedicine guidelines rely upon.

Many rehabilitation services can and should be delivered via telemedicine. Evidence for delivery of mental health services suggests that telemedicine provides comparable care and is cost-effective, but we need more studies on which local resources best complement telerehabilitation. Services need to adapt to populations with specialized needs, such as children, the elderly, and those in forensic settings, among others. Telemedicine services may thrive when we use existing services such as the DMHP program, or a program like a taluk mental health service delivery project, to help clients in their journey through recovery. As new frontiers of mental health like smartphone apps and sensors evolve to offer effective and personalized care, telemedicine services for psychiatry will continue to expand. A strong foundation today can take the first steps and reduce the large treatment gap by facilitating task shifting from specialists to health care workers based in the community.

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Ethical and Legal Aspects of Telepsychiatry

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ABSTRACT

Ethical and legal frameworks essential components in mental health care essential due to inherent nature of illness and practice modules. These serve to safeguard rights and privileges of patients and mental health professional. Gradual evolution of technology and its' application in assessments and interventions is making it as an essential part of mental health care delivery. This transition will bring innovative challenges for mental health care delivery in terms of practice, ethical and legal aspects. Existing ethical and legal frameworks are time tested for real time/face to face delivery of mental health care. Ongoing pandemic provided opportunity and necessitated use of technology for delivering health care needs. Newer operational and practice guidelines have emerged for practice of telemedicine in general and telepsychiatry in specific. These are in lines with existing ethical and legal frameworks. However, additional frameworks with specific definitions about what constitutes consultation, assessment methods, prescription modes and contents of prescription, documentation, certification, eligible platforms for telepsychiatry, need to be incorporated and observed. The article addresses these ethical and legal aspects in telepsychiatry practice with the background of existing practice guidelines and rules.

Keywords: Cyberpsychiatry, ethics, review, telemedicine/telecare

With the revolution of technology, telecom subscribers in India were 1172.44 million and internet subscribers were 718.74 million in December 2019 (TRAI, 2020).[1] In developing country like India, where mental health care resources need to increase to overcome barriers of distance, telepsychiatry seems to be an evolving option. Though telepsychiatry practice is in a stage of infancy in India, studies from other countries support its use to effectively deliver mental health care services.[2] The ongoing pandemic (COVID-19) has necessitated the uptake of telemedicine as an option for healthcare delivery.

The third Global Survey on eHealth by WHO in 125 of its member states showed that 34% had telepsychiatry (25% established ones).[3] Telepsychiatry services in India were initiated in 2004 by the Schizophrenia Research Foundation (SCARF) in Chennai. SCARF used two models: the specialist–doctor–patient model[4] and the mobile telepsychiatry model.[5] In Chhattisgarh, the Jan Swasthya Sahyog group had initiated the synchronous mode of telepsychiatry for both outpatient and occasional emergency mental health services for the rural and tribal areas of Bilaspur and areas around; the patient end was handled by a resident doctor or a paramedic, who facilitated the conversation and maintained logistics.[6] The asynchronous mode of telepsychiatry (details emailed to specialists in a tertiary care center) was effectively used in a project in Maharashtra for psychiatry services.[7] A clinical decision support system/virtual psychiatrist model was developed and validated by the Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh, to assist general practitioners in inaccessible areas.[8–10] National Institute of Mental Health and Neurosciences, Extension for Community Healthcare Outcomes (NIMHANS-ECHO) Project provided a wide range of mental health care services: didactic lectures and case conferences, teleconsultations in district hospitals, Telementoring and Tele E-Learning through Virtual Knowledge Network—National Institute of Mental Health and Neurosciences.[11]

Ethical and Legal Issues of Telepsychiatry

Ethical analysis of using telemedicine service will employ ethical principles to look at, say, how people are benefited by it, whether people have the autonomy to choose or withdraw from it, and so on.[12] In this uncharted area of mental health care services in India, which deals with the confidentiality of information and security of patients, there is a considerable need to construct legal and ethical codes depending on the available evidence and the hurdles that emerge in the due course of time. However, ethical guidelines for providing mental health services "in person" have been available for a long time. Regarding the provision of health information online, ethical guidelines have been developed.[13–15]

The Legal Validity of Telepsychiatry in India

In India, "Telemedicine Practice Guidelines" were released by The Ministry of Health and Family Welfare (MOHFW), New Delhi. Regulation 3.8 with title "Consultation by Telemedicine"[16] was added as an amendment to Indian Medical Council (IMC) (Professional Conduct, Etiquette and Ethics) Regulations, 2002. Subsequently, in collaboration with NIMHANS, the Telemedicine society of India and Indian Psychiatric Society published "Telepsychiatry Operational Guidelines" in May 2020.[18]

Telepsychiatry operational guidelines[18] in India stipulate that the registered medical practitioner (RMP) should abide by the Indian Medical Council Professional Conduct, Etiquette and Ethics Regulations, 2002. In addition, RMP should abide by relevant parts of Acts and rules related to information technology, namely, Information Technology Act (IT Act, 2000), 2000 (Amended in 2008)[19]; the Information Technology (Intermediaries Guidelines) Rules (IT Rules, 2011), 2011; the Information Technology (Reasonable Security Practices and Procedures and Sensitive Personal Data or Information) Rules 2011; applicable laws or rules for health data to ensure privacy and confidentiality of patients, which will be notified periodically. This shall be considered as a mandatory requirement and must be observed strictly in practice.

Psychiatrists should uphold and practice along the lines of laws, rules, and regulations of the place of work. The psychiatrist must follow the Mental Healthcare Act, 2017. Further, all legislations such as Narcotic Drugs and Psychotropic Substances Act (NDPS Act), 1985; Rights to Persons with Disabilities Act, 2016; Pharmacy Act, 1986; Drugs and Magic Remedies (Objectionable Advertisement) Act, 1954, and other relevant legislations about public health should be observed. It is important to note that current telemedicine practice guidelines have not included consultations outside India.

Competency and Practice

Psychiatrists intending to provide telepsychiatry services are required to undertake an online course on the subject, which shall be made available in three years[16]. In the interim period, the proposed telemedicine practice guidelines have to be followed. Ethical norms laid by the IMC (Professional Conduct, Etiquette, and Ethics Regulation, 2002) must be followed by all RMPs including psychiatrists. During telepsychiatry consultation also, treating psychiatrist must observe laws, standard protocols, standard procedures, existing policies, Mental Healthcare Act, 2017, and Rules, 2018 as he/she does during face-to-face in-person care to ensure quality care delivery. The psychiatrist must mention the qualification, training, and experience in telepsychiatry.

Advertising

It is considered unethical to solicit patients directly or indirectly by physicians or institutions or organizations as per Chapter 6 of the IMC (Professional Conduct, Etiquette and Ethics) Regulations, 2002. Further, it prohibits use of methods/advertisements to draw attention to a physician's name, qualification, skills, position, achievements, affiliations, awards in such a manner which will translate into enhancing physician's own importance and draw more attention.

However, it has provisions for a medical practitioner to make formal announcements in print media while starting/changing type/succeeding to another type of practice, about temporary unavailability or about changing address or about charges. Further, it is considered unethical if a physician prints his/her photograph on letterhead or clinic's or hospital's display board, as it amounts to self-advertising as per Chapter 6 of the IMC (Professional Conduct, Etiquette and Ethics) Regulations, 2002. Similar acts on virtual platforms like in social networks and internet are also not acceptable.

It is the responsibility of technology platforms to make sure that patients get to see enlisted RMPs' full names, relevant qualifications, medical council registration numbers, and contact details. Further, platforms also have to take care to enlist only those who are registered with national/state medical councils[16]. For psychologists, the Rehabilitation Council of India (RCI) registration numbers have to be mentioned. Further, platforms are not permitted to carry marketing strategies such as rating or voting of doctor, publishing photographs or recommendations of a particular doctor, or publishing responses of patients/doctors.

However, in the context of telepsychiatry, clear guidelines need to be developed to address the following issues:

- Whether to advertise only once or keep advertising?

Suggestion: to abide by the existing rules by MCI for practice in real time.

- Where to advertise: With the availability of plenty of platforms for online consultations, whether advertisements have to be there on all platforms? Whether advertisements should be there on other platforms, social network sites, and on print and audiovisual media also?

Suggestion: Advertisements can be on the platforms in which the psychiatrists will be providing services. Social networks can be avoided for advertising. Print and audiovisual media can have advertisements only in circumstance as in the MCI.

- On how many platforms one psychiatrist can enroll for practicing?

Suggestion: A psychiatrist can enroll in as many platforms as he/she wants to, but one should ensure that timings are different on different platforms.

- What details about the psychiatrist should be available while advertising on online platforms—example, qualifications, professional position, affiliation, skills, achievements, specialties, photographs, videos, and testimonials by other patients and professionals?

Suggestion: These should be as per the existing rules by MCI.

- Liaison with telemedicine platforms in terms of the uniform standard operating procedure to address liabilities, profit sharing, and referral patterns.

Suggestion: These should be explicitly stated, and preferably a memorandum of understanding can be made before entering into a contract with online platforms.

Responsibilities of Technology Platforms

Telepsychiatry platforms come under the ambit of the term "intermediary" as per IT Act, 2000 (amended in 2008). As per description in IT Act, 2000, "Intermediary, with respect to any particular electronic message means any person who on behalf of another person receives, stores, or transmits that message or provides any service with respect to that message."[19] In the context of telepsychiatry, the intermediaries will be various service providers such as telecom, internet, payment gateways, search engines, web hosting, and cyber shops, and electronic message will include records.

Rules for intermediaries have been outlined in IT Rules, 2011. The rules to be observed by intermediaries while discharging duties are terms and conditions about accessing or using intermediary's resources and these terms and conditions must include privacy and confidentiality statements of all, including vulnerable population; should avoid copyright infringement; should abide by all existing laws; avoid misleading/impersonation; avoid threat to integrity and sovereignty of country and relation with other countries. Personal data of a person includes information related to biometrics, health, sexual orientation, financial details, bank account and card numbers, and passwords. The data available in public domain and under Right to Information Act, 2005, are exempted.

Technology platforms are prohibited from hosting health care delivery using artificial intelligence, that is, by machines

or applications or software instead of real life direct communication with an RMP.[16] However, newer technologies can be used to assist or support the clinician in various stages of evaluation and interventions but this whole process will be controlled by the RMP.

Social Media and Telepsychiatry Practice

Popular platforms such as WhatsApp, Facebook, and Skype can be used for telepsychiatry consultations as Telemedicine Practice Guidelines—2020 do not prohibit using these platforms for teleconsultation. However, adequate security and privacy of the patient and psychiatrist have to be ensured. A written, informed consent from the patient is mandatory for posting or sharing any details such as summary, pictures, audio recordings, and video recordings. However, psychiatrists should refrain from doing this and the patient should also be conveyed against recording or sharing details of the consultation process or content in any form in media or social networks.

Professional boundary crossings and violations are possible if the same personal account on social media is used for professional purposes also. One can avoid mixing personal and professional relationships on social media.

If a psychiatrist has his profile as a psychiatrist on social media in public domains then the person should identify self with the registered name and be cautious and responsible in posting or sharing any content as it will be followed by patients and may be viewed as an official opinion of the profession.

Just like in real life, psychiatrists should share a cordial relationship and have mutual respect in virtual interactions on public platforms.

Process of Consultation in Telepsychiatry

Consent

One of the foundations of ethical health services is informed consent. The informed consent in telepsychiatry can be implied consent or it can be explicit consent. If teleconsultation is initiated by the patient, then it will be considered as implied consent. If a psychiatrist initiates a telepsychiatry consultation, then it will require explicit consent from the patient. Consent needs to be taken in the form of video or audio. This has to be recorded in the patient's record. Before initiating telepsychiatry service, the patient should be made aware about relevant operational aspects of telepsychiatry including advantages and disadvantages and available alternatives and specific details of the psychiatrist providing the service.

Capacity to consent has to be decided in the same manner as in the process of in-person consultation as per the Mental Healthcare Act 2017.[20]

Jurisdiction of Territory and Specialization

As per telemedicine practice guidelines, teleconsultation can be provided to patient in any place in India. However, in certain states, registration to practice is under specific laws which have not been clarified. In circumstances where a previously seen patient intends for a telepsychiatry consultation from a foreign land, it has to be declined and informed that the current guidelines restrict this practice to jurisdiction in India only.

Just as in real-time consultation, in telepsychiatry also, psychiatrist must restrict oneself to the field of specialization and standard recommended evaluation and interventions as mentioned in Section 106 of the Mental Healthcare Act, 2017.

Identification

The patient's identity has to be verified and confirmed before consultation and prescription. For identification, an identity card containing name, age, gender, address, phone number (email ID—optional) with a photograph will be ideal. A family member will be allowed during telepsychiatry consultation if the patient is consulting along with an adult/nominated representative; however, informed consent for the same must be obtained from the patient first, only then the identity of the nominated representative/adult has to be ascertained.

The First Consultation and Follow-up Consultation

First consultation and follow up consultations are defined by telemedicine practice guidelines. If a specified patient consults a specified psychiatrist for the first time or patient visits the specified psychiatrist after six months of previous consultation with same psychiatrist, then it is considered as first consultation.

If specified patient consults for the same condition and for continuation of care within 6 months of the past in-person consultation, it will be considered as follow-up consultation.

Electronic Health Records/ Medical Records

The psychiatrists should maintain case record files of the patients and details of the services provided in the pro forma (Appendix A) provided by the MCI (2002)[17] for at least 3 years from the date of starting treatment. In addition, it has to be ensured that these records are as per the current Telemedicine Practice Guidelines, 2020, and in lines with the requirement of the Mental Healthcare Act, 2017. This has to be explained to the patient also, as the patient will have the right to access their records as per Mental Healthcare (Rights of Persons with Mental Illness) Rules, 2018.

The records which need to be maintained as per telemedicine practice guidelines and telepsychiatry operational guidelines[18] are all details of interaction including messaging/call/audio/video details and all digital/physical case-related documents including investigations/prescriptions/certificates.

Recording: Covert audio/video recording by anyone in telepsychiatry is illegal. Before going for any audio or video recording of telepsychiatry consultation, all parties involved in the process of teleconsultation must explicitly give consent.

Access to basic medical records: The patient has to submit a letter in a prescribed form to access basic medical records as outlined in the Section 25 of the Mental Healthcare Act, 2017. After receiving the patient's written approval, records shall be made accessible only to the patient. The stored audiovisual content can only be released if the patient has authorized specifically for the same.

Prescription

For a telepsychiatry consultation, a prescription has to be issued by the psychi-

atrist as per the rules in Indian Medical Council regulations and Drugs and Cosmetics Act and Rules, and it has to be in a specified format (Appendix B) as suggested by the telemedicine practice guidelines, 2020. Prescription has to be given in a format convenient for the patient: hand-signed prescription can be photographed or scanned and it can be sent to patient by message or an email; if the platform has an option of e-prescription, then the same can be generated and the patient can download it. In the prescriptions, it is preferable to mention ICD or DSM code for diagnosis to avoid revealing the name of diagnosis to the pharmacist or others. Ethical and strict professional judgment has to be considered while documenting information or clinical features on prescription. If a prescription is planned to send to a pharmacy directly or planned to dispense medicines from pharmacy (own or affiliated) and get it delivered, then an explicit consent must be obtained from the patient, and in both situations the patient will get the prescription also.

The psychiatrist is entitled to professional discretion of prescribing medications via the telepsychiatry mode but will have the same accountability as in-person consult. Diagnosis and necessary evaluations, if necessary as per protocol, must be followed before issuing a prescription. The medications which will be prescribed in telepsychiatry will depend on the type and mode of consultation and categories of medications. These are as mentioned in the telepsychiatry practice guidelines, 2020.[18]

Dispensing medicines by psychiatrist: From ethical and legal aspects, if a psychiatrist is dispensing drugs, it may bring in conflict of interest and trust issue from the patient's point of view. So this remains a debatable issue. To stay away from the conflict of interest, one can consider refraining from selling medicines to own patients.

Proxy/Asynchronous Consultation

A healthcare worker conducts the consultation process on behalf of a psychiatrist and records the session, which will be viewed by the psychiatrist and prescriptions are sent in the name of treating psychiatrist. This will amount to unethical practice. However, video evidence of clinical features and seeking expert opinion by a physician are permitted.

Initiation of Telepsychiatry Consultation by a Family Member or a Healthcare Worker with the Patient

A person can authorize any person or a family member or a nominated representative (as per advance directive[20]) to initiate telepsychiatry consultation[16]. All such consultations can be with or without the patient, but all such consultations must be considered after an explicit consent by the patient. A child or adult can be a patient here.

For children (less than 16 years): Age and identity of patient and family member, document to establish the patient, and family member's relationship have to be verified.

For adult patients: Age and identity of patient and family member, document to establish the patient, and family member's relationship have to be verified. Initiate with capacity assessment, if capacity to consent is present, then consent has to be obtained via teleconsultation, which has to be documented. If psychiatrist feels that the capacity to consent is absent or patient is coerced, then in-person consultation has to be advised.

For follow-up patients, the advance directive has to be checked, in its absence, the same has to be documented and one has to proceed with obtaining consent from the nominated representative, which also has to be documented.

Initiation of Telepsychiatry Consultation by a Family Member Without the Patient

This can be considered during follow-up only.

First consultation: For all such consultations, in-person consultation is advised.

Follow-up consultation: For patients eligible for follow-up, in the absence of the patient, the follow-up should proceed with verifying documents of identity of the patient, family member, relationship, and authorization letter. In certain conditions like moderate to severe dementia with inability to consent, the psychiatrist can agree for telepsychiatry consultation without the patient.

Telepsychiatry Consultation Between a Healthcare Worker and a Psychiatrist

In circumstances such as community visit, camps, and specialized settings for specified populations like prisoners/beggars/orphans/destitute/persons with mental illness, a healthcare worker can initiate consultation.[18]

As per the Mental Healthcare Act, 2007, the healthcare worker initiated mode of consultation can be used for assisting legal agencies also.

In emergency situations where there is threat by person to person's own life or other's life or to property, treatment can be provided by any RMP in community or health establishment, if there is informed consent from nominated representative (Section 94).[20] Here, the person needs to be shifted to the closest mental health facility and emergency intervention will be limited to 72 hours; but in disasters it may extend up to 7 days.

Stopping or Referring for In-person Consultation During Telepsychiatry Consultation

This can be considered if the patient refuses to consent, lacks capacity to consent for treatment, in emergencies, if there is risk of harm to self/others, if patient is in conflict with law, or falls under Protection of Children from Sexual Offences Act, 2012, for certification.

Telepsychotherapy

Just like telepsychiatry, a psychiatrist can provide telepsychotherapy to any patient from any place in India. The core principles of traditional in-person psychotherapy will remain the same irrespective of the mode of communication. Considering the limitations of psychotherapy in virtual mode, few rules need to observed[18]:

1. Detailed evaluation has to be done in a real-time interview before initiating telepsychotherapy. Informed consent must be obtained before initiation. Diagnosis is essential before initiating therapy.
2. A psychiatrist can do it simultaneously, or subsequently, with pharmacotherapy by himself/herself or can refer.
3. Patient's ability to get engaged in teletherapy to be assessed before initiating.
4. The need of emergency care has to be assessed before each session, and in-person consultation must be suggested for emergencies.
5. The psychiatrist has professional discretion to entertain family member/s to be part of the therapy session.
6. Quality of care, ethics, laws have to be observed in the same manner as in face-to-face therapy.
7. All professional etiquette as per the requirement have to be observed.
8. All communications have to be documented.
9. The psychiatrist and patient can discontinue therapy or refer to another therapist at any time.
10. The patient can also discontinue or choose other therapist at any stage.

The potential drawbacks of e-therapy (in the context of psychotherapy) have been documented for a long time[18,19]: Communication of emotions over the internet is difficult. The psychiatrist/psychotherapist may have limited knowledge of a person's culture, language, rituals, and certain factors that may play a role in illness and outcome. Consensus and uniformity are lacking in training e-therapists. Patients may find it difficult to identify psychiatrist with required qualifications, and an unlicensed person may advertise themselves as competent. How to proceed in case if a patient is a minor or how to identify that the patient is a minor? The psychiatrist/psychotherapist will not know who else is there along with the patient at the other end. Conversations can be intercepted and accessed by others. There is a risk of the psychiatrist or the patient forwarding messages to someone else. Using a shared computer for evaluation and intervention may allow a third person to access communication and transcripts if any. Technical and internet errors may interrupt the process.

Addiction Medicine and Telepsychiatry

Addiction medicine evaluation and interventions will warrant in-person physical examination, laboratory evaluation, physiological parameters evaluations, psychological evaluations, and at times continuous observations. Complications related to substance use disorders can vary depending on the substance used and may involve other specialists' inputs. Medications to manage these conditions may also be under list C, which is prohibited. However, healthcare workers and existing remote facilities can be considered for delivering addiction medicine services.

Patient in Conflict with the Law

In all telepsychiatry consultations, the psychiatrist has to ask whether the patient is in conflict with the law. Psychiatrist can choose to advise person to come for in-person consultation or in-patient care for detailed evaluation, diagnosis, treatment, and certification. For issuing medical records or certificates, Mental Healthcare Act, 2017, should be followed, and the medical board should be consulted.

Ethical Challenges

With the corporate sector assuring proven, reliable, and cost-effective telepsychiatry and telehealth services being made available, there can be new ethical challenges such as follows:

- Depersonalizing doctor–patient relationship: Technology may act as a more important tool for evaluation rather than professional skills. With the advent of algorithms for diagnosis and management, in the longer run, self-diagnosis and self-medication can be a risk.
- Shifting and widening jurisdictions of practice: With patient clientele being across the globe, it may be good to have cross-border legislation to deliver the services, and regulation for international services can be considered.
- Data and technical processing as per patients' wish: Current guidelines focus on the storage of data from clinician's perspectives. New regulations to have provisions to make data available to the patients need to be considered.
- Adapting the informed consent to the new technologies: Modes for video recording of consent for consultations have to be developed and standardized for uniformity and legal requirements.
- What if the user becomes suspicious about the technical process? Legislation should keep pace with technological innovations.
- Upholding human dignity and rights in the midst of technology: These have been addressed in current practice guidelines; however, newer challenges may come up with an increase in the trend of telepsychiatry practice.
- Health insurance and clear reimbursement policy: The insurance sector has to cover expenses like in-person consultations. Guidelines have to be framed for these.

Malpractice and Professional Liability

If a psychiatrist fails to render his professional services because of negligence or breach of his responsibility despite being in contract with patient for offering such services, then it amounts for malpractice. When a psychiatrist owes professional services to a patient but fails in the service which results in harm to the patient, then this harm which results from the failure from the end of the psychiatrist is termed as negligence.

Professional Misconduct

Professional conduct requirements are the same as mentioned in the MCI Act for professional conduct and ethics. Further, acts which breach patient's privacy or confidentiality or care or existing laws for telepsychiatry will be considered as acts of professional misconduct. Few nonpermissible actions are as follows:

- Patient is requesting in-person consultation but psychiatrist insists on telepsychiatry.
- Misuse of patient's personal and clinical data by the psychiatrist.
- A psychiatrist prescribes prohibited or restricted medicines.
- Indulging in unethical methods to solicit patients by advertisements.

The penalties for professional misconduct are defined as per the MCI Act.

Discussion

Existing principles for clinical, ethical, and legal aspects of patient care and practice have paved path for telepsychiatry and these are helping for transition from in-person consultation to teleconsultation. As telepsychiatry in finding foothold across the globe, specifically in India, experience needs to translate into research, which will help in refining guidelines and in framing specific legislations. The pros and cons need to be viewed with objective viewpoint so as to ensure better acceptance by psychiatrists and patients to find a safe transition path. Three pillars—beneficence, nonmaleficence, and autonomy—of professional ethics must be strengthened further with the aid of research and legal framework. Finally, it is the patient care at the core of telepsychiatry, and ethical and legal aspects should swivel around patient care.

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Appendix A: Format for Medical Record

1. Name of the patient :
2. Age :
3. Sex :
4. Address :
5. Occupation :
6. Date of 1st visit :
7. Clinical note (summary) of the case:
8. Provisional diagnosis :
9. Investigations advised with reports:
10. Diagnosis after investigation:
11. Advice:

Follow-up
Date:
Observations:
Signature in full.....
Name of treating physician

Appendix B: Sample Prescription Format

Hospital name/Clinic name/Letter head
Registered medical practitioner's name
Qualification
Registration number
Address
Contact details (email and phone number)
Date, time and duration of consultation
Name of patient
Patient ID
Age
Gender
Address
Height (whenever applicable)
Weight (whenever applicable)
LMP (whenever applicable)
Chief complaints
Relevant points from history
Examination/Lab findings
Suggested investigations
Diagnosis or provisional diagnosis
Treatment

1. Name of the medicine (In capital letters only with generic name)
   Drug form, strength, frequency of administration and duration
   Special instructions
   RMP's signature stamp

Note: This prescription is generated on a teleconsultation.

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Evolution of Community Telepsychiatry in India Showcasing the SCARF Model

Hema Tharoor[1], Rangaswamy Thara[2]

ABSTRACT

This review chronicles the origin of telepsychiatry services started by the Schizophrenia Research Foundation (SCARF) in the community and traces the birth of the Scarf Telepsychiatry in Pudukkottai (STEP) program at Pudukkottai in Tamil Nadu. This paper also examines the trajectory of STEP and highlights other relevant models existing in the country in the last decade.

Keywords: Community involvement and partnerships, rehabilitation, review, schizophrenia

The Indian National Mental Health Survey of 2015–2016 has identified that the treatment gap for mental illnesses ranges between 70% and 92%.[1] Telepsychiatry can bridge this gap in low-resource settings. In 2010, the Schizophrenia Research Foundation (SCARF) introduced the first and only mobile telepsychiatry in the country using technology to leverage this gap in the community. This review will focus on the experience of the SCARF model for telepsychiatry in Tamil Nadu. It will also highlight other telepsychiatry services from different parts of the country.

SCARF Community Model—the Beginning

SCARF is a nongovernmental organization providing quality care and rehabilitation services in the field of mental health since 1984. SCARF started its first community telepsychiatry initiative by starting community clinics in two coastal districts, Cuddalore and Nagapattinam in Tamil Nadu, soon after the Tsunami disaster in 2004.[2] Funded by the Oxfam trust, Bengaluru, and the South Asian Total Health Initiative (SATHI), the objective was to offer disaster management through counseling and psychosocial support for the victims and their families. Technical assistance came from the Indian Space Research Organisation (ISRO), which offered a partnership where connectivity and hardware were free of cost, and SCARF had to provide the equipment to deploy the service. SCARF started the first tele-initiative in the community for tsunami victims by taking the cue from ISRO and adopting Integrated Services Digital Network lines. At the local NGO's location at Cuddalore and Nagapattinam, seven peripheral units were identified and connected to the central hub at SCARF, Chennai. The psychiatrists at SCARF would periodically visit these units to review and offer face-to-face consultation. Psychotherapy was difficult online because of lack of privacy, rapport building, and time constraints. This pilot project demonstrated that telepsychiatry services were widely accepted and endorsed by the rural population in the remote villages that were in dire need of mental health services.

SCARF Telepsychiatry in Pudukottai (STEP)

The Birth

Inspired by the success of the Tsunami telepsychiatry project, SCARF decided to expand its teleservices. Thus, the first and only mobile telepsychiatry bus in the country was launched in 2010.[3] The bus also contained a pharmacy from which the clinic facilitator dispensed medicines.

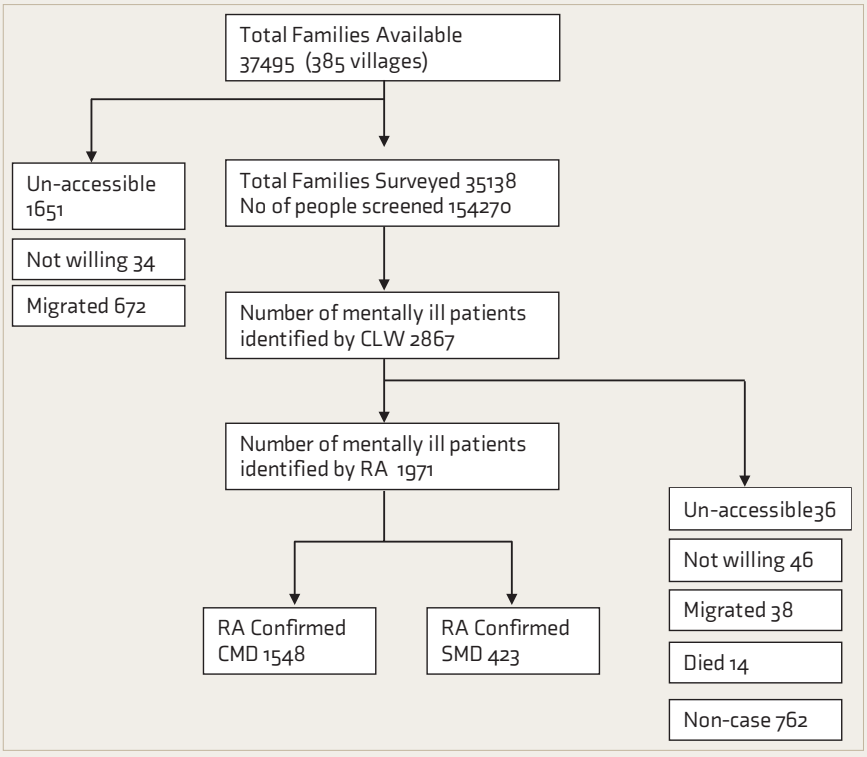
The Tata Education Trust, Mumbai, sponsored this project. The district Pudukkottai was chosen for providing services. This district had the least doctor:patient ratio in Tamil Nadu and the district mental health program (DMHP) was not available there in 2010. The available mental health services in the district were restricted to one psychiatrist in the government hospital and two in the private sector. Hence, many patients remained untreated or irregularly treated. The support offered from a local NGO and the presence of uninterrupted power supply in the district helped in implementing the project. Four administrative divisions or taluks in the district were covered in the

first phase of the program. The two taluks encompassing 156 villages, with a population of about 300,000, were covered by the mobile telepsychiatry unit (bus). A fixed line connected the other two taluks. About 2,000–3,000 people were expected to avail of this service over the program period of three years. STEP, which stood for SCARF telepsychiatry in Pudukkottai was exclusive for serving patients with serious mental illness (SMI) such as schizophrenia and related disorders, bipolar disorder, and severe depression.

The local NGO played a significant role in this community intervention. The local NGO's staff knew the people, language, geography of the land, and were an essential link between the SCARF team and the community. Community-level workers (CLW) with education background ranging from 10th grade to undergraduation were recruited from the program area. The selection of the CLW was based on attitude and community work experience. The CLW was trained for two weeks initially with continued supervision and booster sessions by the team at SCARF. These field staff worked relentlessly in doing a door-to-door survey in the initial stages to identify and screen for mental illness. The total families surveyed were 35,138, and the number of persons screened 154,270 (**Figure 1**). After screening, the CLW would refer the identified individuals to the research staff at the clinic. The role of the CLW throughout was to create awareness, conduct home visits, ensure compliance to treatment and follow-up visits, supplement information for diagnosis, and management. The role of the CLW throughout was to create awareness, conduct home visits, ensure compliance to treatment and follow-up visits, supplement information for diagnosis & management, psychoeducation of family members and leveraging with the local NGO's resources for employment, referrals and facilitate access to benefits (disability benefits, National Rural Employment Guarantee Act [NREGA]). Telementoring of the CLW and research staff was done by the program coordinator at SCARF using the videoconferencing regularly.

FIGURE 1.

The Survey Results



Abbreviations. SMD: severe mental disorders, CMD: common mental disorders.
Source . Initial survey done by community level workers (CLW), research assistant (RA) at Pudukkottai in 2010.

The Teething Days

The unique selling point of this program is that the mobile telepsychiatry unit is mounted inside a custom made bus. It contained a private consultation chamber equipped with videoconferencing equipment that is connected through wireless broadband to the central hub at Chennai. The rural population appreciated that they had a one-point spot in the community, referred to as a tele-bus that provided both assessment and treatment combined in a single sitting. The bus contained a public address system and a large flat-screen television panel through which movies and short films on mental health were screened when the bus was parked in the evenings in places like the bus terminus. Theatre and street plays were additionally conducted in the target villages. The NGOs, social workers, and police officers were sensitized to refer patients to these services because in the rural population, explanatory models of mental illness were predominantly magicoreligious, leading them to access centers which "cured" these maladies. Additionally, self-help groups were also initiated among patients and their families in liaison with the local NGOs. The financial gains from this effort have prompted families to network with compatible service providers and ensure continued participation in the program.

The STEP Compliance with Cellphone

The bus was the star attraction of the STEP program (**Table 1** and **Figure 2**). However, considering that several peo-

TABLE 1.

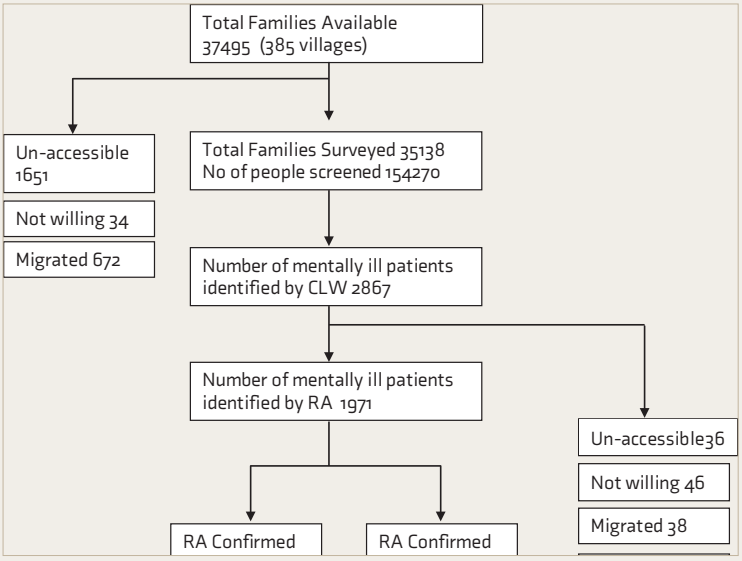
Goals of Step Program

To provide mental health care in remote areas of TN
Starting a mobile telepsychiatry clinic
To liaise with local NGOs to provide this service.
Train NGO/SHG to identify, initiate early treatment, and refer persons with mental health problems
Strengthen the referral system
Create public awareness
Empower families and users
Psychosocial rehabilitation
To create a standardized reporting format to enable periodic analyses

Abbreviations. NGO: nongovernmental organizations, SHG: self-help groups.

FIGURE 2.

STEP Program—Mobile Bus and Consultation (Right) Connected to the Psychiatrist at SCARF (Left)



ple owned a mobile phone, notwithstanding the urban–rural divide, STEP decided to capitalize on the increasing teledensity in the Pudukkottai district. So a plan was devised to monitor patients' treatment adherence via SMS and other phone applications. The frequency of patient visits was monthly or fortnightly. Monitoring of scheduled appointments or change in clinic schedule were updated to families via SMS since more than 80% of the patients/families in the STEP program had access to a cell phone.[4] Using mobile phone message alerts considerably reduced patient attrition rates at the clinic. Additionally, alarm applications on the phone were used as a reminder about follow-up visits or medication intake. Occasionally, when patients failed to arrive at the clinic, a field staff would make a home visit with their laptops and use the available wireless 3G services to connect with the psychiatrist at the central hub in Chennai. Parallelly, the families could contact the psychiatrist in case of any emergency arising due to adverse side effects or relapse. The availability of mobile phones with most families helped in monitoring treatment compliance.

The Functioning of the STEP Clinic

The STEP program covered a population of 500,000 across six taluks and has provided care to about 2500 patients in three years.[5] Women accounted for 55.34%; the diagnosis was schizophrenia and related psychosis (47%) and bipolar disorder (9%). The SCARF psychiatrists in liaison with the peripheral team at Pudukkottai decided on specific days for teleconsultation. Depending on the number of patients at the center, the number of required consultation days was fixed. We started with registered patients review and gradually expanded to include new patients as well. The interview and assessment involved both patient and their families. The numbers varied from 2 to15 patients per day, and it took 10–40 min, and new patients were assessed in 30 min to an hour. Based on their clinical status and improvement, patients were either reviewed weekly or fortnightly or once a month. The peripheral units were instructed to contact the dedicated psychiatrist or the duty psychiatrist for immediate teleconsultation in case of an emergency.

Data Management and Security

SCARF was committed to maintain the highest ethical standards and sustain the optimum quality of care in the delivery of its mental health care services through the telemedicine system. Each patient was assigned a unique identification number and was registered both at the peripheral and the central unit. A patient record carried all relevant sociodemographic, clinical, and treatment details. The paper records were signed and dated after each visit and maintained at the central unit. The internal audit committee of SCARF did audits of the records and the conduct of the program, and the data has been archived and digitally stored at SCARF.

The End

The first phase of the STEP program (2010–2013) had demonstrated the feasibility of conducting a community mental health program using telepsychiatry. During Phase II (2015–2017), we scaled-up the program by increasing the geographical reach of the services to two more taluks and enhanced the psychosocial components of the program. Three hundred patients who were severely disabled were certified and will receive disability pension/benefits in contrast to not a single patient being certified or receiving disability-related benefits before the start of the program. Additionally, we undertook the task of shifting patients systematically to the local resources and integrating them with the public health care system. A No-cost extension (NCE) phase from January to December 2018 was designed to close the gaps and made the services equable and accessible. In 2019, during the second phase of NCE, the following objectives were executed such as (a) Integration of the STEP clinic patients into the public health system, (b) Continuation and expansion of the current psychosocial rehabilitation (PSR) program in all six taluks, (c) Psychosocial rehabilitation/intervention for Gaja Cyclone survivors, (d) Continuation of working with the district administration, DMHP, disability commissioner, etc., to link disabled patients with the available government schemes, and (e) Establishment of mental health and suicide prevention committees in the villages.

Learnings and Challenges

The SCARF community mobile telepsychiatry model (STEP) has touched the lives of persons with severe mental illness (SMI) who would have remained untreated for decades. This program revealed that a patient-centered, public-private partner-

ship model acting as the pulley and technology as the lever could bridge the gap of mental health care delivery in the community. The reasons for STEP's success have been a technology-driven initiative, training lay people, and networking and partnership with local NGOs. The cost of a consult and providing medicines for a month has been calculated as 700 INR approximately.[5] In summary, the intervention was effective and well-accepted based on the number of registrations and feedback collected by the research assistants on a six-monthly basis from both the patient and their families. However issues faced were related to connectivity disturbances or failure causing electronic medical records to crash. Management of crisis situation especially patients with a number of physical co-morbidities or lack of a reliable NGO in some locations and lack of adequate funding to make the program sustainable over time were the common challenges.

Review of Telepsychiatry Models in the Country

Hub and Spokes Model

National Institute of Mental health and Neurosciences (NIMHANS) started this model of telepsychiatry calling it the "hub" and their outreach services were named spokes.[6] The districts, taluks, prisons, and relief and rehabilitation centers are their outreach services.[7] The first contact was made to the mental health professional at the spokes and discussed with the hub psychiatrist. The consultation with the hub psychiatrist is scheduled based on the clinical details and demographics sent by the mental health worker from the spoke. The average duration of the consultation was 10–15 minutes. The cost of the consultation was cited as 134 INR.[7,8] Low price in the NIMHANS model was possible because the model was executed using an already existing infrastructures at the outreach centers. Similarly, the state of Maharashtra also established a "hub and spoke model" with 6 specialist centers (hubs) connected to 27 districts and 4 subdistrict hospitals (spokes).[9] The program utilized dedicated lease lines of fiber optic cables and used "store and forward (asynchronous) consultation" for psychiatry due to the nonavailability of synchronous timeframes between the primary care physician (in the spokes) and psychiatrist. An EHR (electronic health record) and e-mail were used to get the psychiatrist's opinion based on the information sent by the primary care physician. This study reports that asynchronous telepsychiatry is feasible and can offer an alternative way of conducting telepsychiatry.[9]

Extension for Community Health Care Outcomes (ECHO) Model for Deaddiction

NIMHANS expanded its hubs and spokes model to the community in the field of deaddiction. A videoconferencing app was used for telementoring to connect multiple community health care teams (spokes) in Chhattisgarh with deaddiction experts (hubs) at NIMHANS.[6] Counsellors working at 12 ECHO clinics from 11 rural districts were periodically connected to NIMHANS for 6 months in 2019.[6] In this model, hub specialists would conduct group-based discussions and patient-centered learning for the counselors. In 6 months last year, NIMHANS did 28 weekly tele-ECHO addiction clinics and found high prevalence rates of alcohol (lifetime 80% and current 71%) and tobacco (lifetime 60% and current 56%.).[6] The patient population at the spokes presented to the community health providers earlier than that of the specialist treatment center. This finding shows that the ECHO model can be replicated in remote areas where there is a shortage of trained workforce. The community workers also endorsed the telementoring model of NIMHANS ECHO and gave positive feedback about capacity building. They felt that the interaction with specialists at the hub, group discussion of case summaries, and the attempt to mitigate professional isolation through discussions were promising steps toward improvement in mental health and addiction for remote and rural areas.

Clinical Decision-Based Support System (CDSS)

Developed by Malhotra and colleagues, CDSS is an online digital platform for providing telepsychiatry service to three remote sites (Himachal Pradesh, Jammu and Kashmir [JK], and Uttarkhand) in North India.[10,11] This model was coined as a "psychiatrist on the web" and had an EMR interface. The CDSS was unique and had both synchronous (videoconferencing) and asynchronous (store and forward) solutions. This digital platform has 18 modules for diagnosis (adult and child versions), management, and follow-up, usable by nonprofessionals after brief training.[12] The modules suggest both pharmacological and psychological management. Reports show the CDSS as feasible, reliable, and with high levels of patient satisfaction. After the launch of the project, the nodal site (Chandigarh) reported that 2594 patients were assessed with varied diagnoses at the three remote sites.[12]

Wireless Network and Videoconferencing

A retrospective review of case files of patients (N = 139) who have received collaborative telepsychiatric consultations from January 2013 to June 2017 through videoconferencing at a district hospital in Karnataka has been published recently.[13] In total, 25.9% of the patients had schizophrenia and other psychotic disorders, 14.4% had mental retardation, 13.7% had a mood disorder, and 14.4% had a substance use disorder. Regarding the interventions provided, 67.6% received pharmacotherapy, 7.9% received rehabilitation along with pharmacotherapy, while the rest were referred for further evaluation and in-patient care. The challenges cited were: connectivity disturbances/failure, lack of workforce to allocate telepsychiatry responsibility, cost-effectiveness, maintaining confidentiality, and data security.[14]

Comparing Telepsychiatry Models

It has been a decade since the launch of the SCARF model. All the other models, in comparison to the STEP, have focused on leveraging technology in the most innovative ways to deliver mental health services. The launch of 4G and 5G has increased internet speed and bandwidth, and is helping telepsychia-

try models to be more sophisticated, less complicated, and have better connectivity in remote areas of the country. The telepsychiatry equipment in the form of one's smartphone or a tablet has been tested and proven to be effective in the hubs and spokes model of NIMHANS. In contrast, the traditional desktop and a TV monitor in the fixed clinic or the mobile bus were the highlights of the STEP program, considering that the patients did not have any access to mental health services for a long time. The EMR-based diagnostic system for telepsychiatry consultations developed by the Chandigarh group generates diagnoses across age groups automatically. It has a user-friendly operating system for data entry, ensuring effective data management and security. In contrast, the electronic records and data sheets at SCARF were designed to capture patient data and the diagnosis. The last decade has seen exponential growth in the way EMR has evolved from the SCARF model to the Chandigarh electronic health record. There is a clear trajectory in the growth of leveraging technology, capacity building, and mentoring, as seen in the ECHO model of NIMHANS. To conclude, the STEP program has completed a decade of service to the SMI persons in the villages of Pudukkottai and continues to focus on PSR and suicide prevention in these taluks.

Conclusion and Future Directions

The community telepsychiatry experience during the Tsunami and the STEP program are significant milestones, and innovations in the community-based services of SCARF, a legacy for the future. STEP telepsychiatry program has been the first and longest program to cater to the needs of the rural community in the country. These digitally-driven community models executed by NIMHANS, Maharashtra, and Chandigarh have all been well received. Telepsychiatry service in all districts under the DMHP is feasible by utilizing the increased mobile phone usage even in the rural population. Training and capacity building of lay CLW as foot soldiers to execute this plan can be the way forward. A joint effort to discuss the efficacy of telepsychiatry in the rural community between psychiatrists, NGOs, CLW, policymakers, and consumers of these services is the need of the hour. The success of these mobile- or tablet-based apps or online platforms with tailor-made EMR should make all the stakeholders understand the relevance of leveraging technology and mental health delivery and reduce the mental health gap in the future. The "telemedicine guideline" released in March 2020 will streamline the practice of telemedicine in India[15] and may lead to the introduction of telepsychiatry in the National Mental Health Program. High-quality technology-based interventions coupled with the availability of high-speed internet connectivity even in the rural areas can tremendously increase access to mental health care through the digital means.

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Telepsychiatry and Telepsychotherapy: Critical Issues Faced by Indian Patients and Psychiatrists

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ABSTRACT

Telepsychiatry and telepsychotherapy are new treatment modalities that have been used more than ever during the COVID-19 pandemic. There are many challenges that are faced with the use of this modality for both patients and psychiatrists alike. There are critical issues faced with regard to the development of rapport, managing the entire teleconsultation set up, privacy and issues related to fees, issues related to prescribing and monitoring, and issues while handling emergencies. The challenges faced are discussed and some solutions if possible are laid out. **</Abs>**

Keywords: Telepsychiatry, telepsychotherapy, patients, psychiatrists

Telepsychiatry and telepsychotherapy are by no means new treatment modalities as even from the 1960s consultations and therapy by using the telephone have happened.[1]

Even as these modalities came into more common use in other parts of the world, in India; however, it became more widespread in the last few years only. With the onset of the coronavirus disease (COVID-19) pandemic, there has been a surge in telepsychiatry services, online and telepsychotherapy services with patients and psychiatrists alike being compelled to resort to these media of services due to the restrictions imposed.[2] There have also been the development of clear guidelines for telepsychiatry[3] and telepsychotherapy[4] from an Indian perspective. While these guidelines are truly comprehensive, some lacunae and gray areas remain in clinical practice that need to be addressed. The current article is based on the clinical experience of the authors and discusses the advantages and key issues faced by patients and psychiatrists in the rendering of these services in a private practice single standalone clinic scenario from an outpatient standpoint.

Challenge 1: The Acceptability of Telepsychiatry and Telepsychotherapy as a Mode of Treatment

Many Indian patients have always been used to physically seeing their doctor, and in Indian society, with a patriarchal pedestal given to doctors, the concept of having visited the doctor and being examined by the doctor is vital to patient satisfaction.[5] Many patients may not accept telepsychiatry and telepsychotherapy as does not substitute the real experience of a clinic and a consultation. Patients often are not adept at using digital media and may not be able to connect well on a video call. They would want to see their doctor clearly, and the feeling of remoteness exists and has been expressed by many patients when a teleconsult happens. It is also important to mention that doctors are also new to telepsychiatry and telepsychotherapy as a treatment modality and would need time to adapt to the same. They also need to start using these modalities regularly to understand what it entails and offer better services to their patients. There is a need for psychiatrists to be trained in telepsychiatry while, more importantly, patients need to be trained in using the right media and right devices to get the most of the telepsychiatry consultation and more so because they are actually paying for the service. More awareness in the general public needs to be created with regard to telepsychiatry as a modality to enable more users to accept and utilize it as a treatment method.[6] There is a need for the establishment of full-time telepsychiatry units in the current scenario in various medical colleges and hospitals to cater to the needs of varied populations.

Challenge 2: Prescription of Various Drugs via Telepsychiatry

One of the major challenges for psychiatrists is the prudent and judicious pre-

scription of medication via telepsychiatry. Although most psychiatric drugs are safe and can be prescribed via telepsychiatry, there is a need to be able to monitor various parameters while the patient is put on certain medications. The prescription of injectables like depot antipsychotics via telepsychiatry can only be affected through a registered medical practitioner or a trained health worker.

There is a confounding area on whether drugs like disulfiram could be prescribed via telepsychiatry in view of treatment-emergent side effects and possibilities of disulfiram ethanol reactions that can occur. Prescribing drugs like lamotrigine or clozapine will require monitoring for drug reactions or drug levels. Patients may not follow-up regularly in telepsychiatry. Thus, life-threatening side effects may occur, and the prescribing doctor may not be in a position to follow-up and monitor the same in patients. The telepsychiatry guidelines list these drugs under list B, and hence doctors must exert utmost caution while prescribing the same. The issue of prescribing these drugs also arises when the patient is already maintained on the same rather than starting a new prescription. It is also prudent to mention that sometimes these drugs may be the drug of choice for the condition the patient presents with, like treatment-resistant schizophrenia in the case of Clozapine. The decision is best rested with the treating doctor.[7]

Challenge 3: When Patients May Misuse Telepsychiatry

There may be instances when patients may turn to telepsychiatry for want of a prescription of the drug that they want to abuse. This happens when patients that have been misusing and escalating the dose of the drug on their own may visit a psychiatrist and suggest that certain drugs suit them better just to procure a prescription of the same. These patients may escalate dose on their own and not adhere to the prescription. They may also visit different helplines and telepsychiatry portals and take the same prescription from different doctors to have a greater stock of their drug of abuse, and this may result in them gaining further impetus in their abuse patterns.

One issue that we have observed due to teleconsultation is the rise in fake calls with the aim to seek prescriptions for benzodiazepines and other drugs of abuse, including cough syrups. Many patients who want to abuse drugs may manage to get multiple prescriptions by calling numerous doctors. There are no robust mechanisms to check these tendencies, and in the situation of a drug overdose, the prescribing doctor can be blamed.[8] The current telepsychiatry guidelines are clear about which drugs must be prescribed, where caution is to be exerted and which drugs must not be prescribed.[3]

Challenge 4: Telepsychiatry in Special Populations

One of the major challenges of telepsychiatry is the use of the same in special groups like older adults and children and adolescents. Older people may not, at times, have the digital know-how to be part of video sessions and thus may be crippled while using telepsychiatry. They may, at times, have to use an audio call and may also have problems in accessing documents that are emailed and prescriptions that may be sent. Even after receiving medication and treatment online, most elderly are alone and may not have access to medications and thus may not be able to procure medication that has been prescribed.[9]

At our center, we observed that many children and adolescents suffering from attention deficit hyperactivity disorder had to stop methylphenidate as it was not available on an e-prescription. Many of these children were prescribed atomoxetine, which did not have the same effect. Parents may want to be around children and adolescents during telepsychiatry counseling sessions and may thus not allow the privacy that is otherwise possible in a clinic setting.[10]

Challenge 5: The Issue of Fees in Telepsychiatry and Telepsychotherapy

There are many clinical, legal, and ethical dilemmas that confound fees in telepsychiatry and telepsychotherapy. One of the first dilemmas is whether fees must be collected in advance before the session in order to confirm the appointment and whether fees would be refunded in the event of cancellation of sessions. This would all have to be mentioned in the proforma and consent form that patients may fill. The issue of collecting fees in advance is a vexing one, as normally doctors usually collect their fees after a consultation. Furthermore, doctors may have to run after patients who do not pay fees even after having received a full consultation. Another issue is whether the fees charged for a telepsychiatry consultation must be the same or must be less than a face-to-face consultation. This is so as most people believe that the face-to-face consultation has far more value than a video consultation. Another important facet is that in India, many doctors offer advice on the phone and usually do not charge for the same. Even as many nongovernmental organizations and voluntary agencies offer telepsychiatry services free of cost, the private practitioners is in a dilemma whether they must charge for the services. Many doctors who never charged for telephonic advice may have to charge now as their telephone consultations are the only source of income for them.[11]

Challenge 6: Handling of Psychiatric Emergencies in Telepsychiatry Settings

Another concern with telepsychiatry is the handling of psychiatric emergencies. The key question is how does one handle a patient that may be suicidal and who refuses to give details of family members, and the only details we have are his address and personal details with no details of family members. It is important that when a patient calls a psychiatrist for a telephonic consultation and expresses suicidal ideation, and may leave the consultation suddenly, or switches off his phone, the psychiatrist must inform the local police about the same. The psychiatrist must keep details and the name and number of a relative who can be informed in such emergencies. One can keep the number of anyone the patient deems fit as many patients may be feeling some oppression by their family members itself.

This may also happen when someone on the phone may disclose domestic vi-

olence and child sexual abuse, and when under the law, we are supposed to report such matters to local authorities. Do we refer such patients to specific helplines for these causes or do we take it on ourselves to report such matters and there is also a need for specific telepsychiatry units that cater to specific cases and probably have trained personnel to manage such cases when they arise.[12]

Challenge 7: The Medium to Conduct Telepsychiatry Services

There is a debate about whether telepsychiatry would be conducted on a special application devised for the same or whether social media platforms like WhatsApp and Skype would suffice for counseling sessions. Many doctors use WhatsApp or Skype as a medium for communication using their personal phone numbers. Even if the service is free, would using their personal number be a viable approach or whether one must have a dedicated phone line for the same. There is a chance for lack of encryption, privacy, and chances of these accounts being hacked, which is an issue as many times personal chats here are intertwined with personal chats and groups. Guidelines on the storage of records of teleconsultations, chats, and legal aspects of these services is another dilemma for the telepsychiatry movement. There will also be an additional investment in this infrastructure if security and storage had to be maintained.[13]

Challenge 8: Research in Telepsychiatry and Telepsychotherapy

Telepsychiatry and telepsychotherapy hold enormous potential and needs to be permanently available rather than just in times of emergencies and pandemics. Indian studies on reliability, efficacy, and cost-effectiveness of telepsychiatry also need to be carried out in the future in both rural and urban settings. Postgraduate students must be encouraged to take up research in these areas. Psychiatrists and psychologists in training must be prompted to work in helplines and telepsychiatry units so that they get a first-hand idea of how these services function. Unlike the west, we need large, robust studies on telepsychiatry operations across rural and urban landscapes, and the data gathered shall help us establish the efficacy of the system while also fill lacunae that exist. These studies need to be planned well to assess both the operational and the interventional dimensions of telepsychiatry.[14]

Challenge 9: Training in Telepsychiatry and Telepsychotherapy

Many voluntary agencies have started offering free mental health services telephonically during the COVID-19 lockdown. While these services are available, there is no stringent body, guidelines, or regulations that would monitor the quality of these services and whether ethical standards are adhered to. Doctors and professionals offering telepsychiatry services must be qualified and trained in this regard to some extent. Different clinicians may have different telepsychiatry approaches, which may result in nonuniformity of telepsychiatry services across the country. Mental health professionals handling calls in a helpline need training on the various types of calls that may come and how they have to respond in various situations. There must be help and access to legal authorities and police where needed in emergency situations. It is also vital that all procedures be laid down on writing as a standard operating procedure for the organization so that no deviation from what has been stated happens.[15]

Challenge 10: Critical Issues in Telepsychotherapy

Telepsychotherapy may either happen in an audio or video format. It is very important to have sound internet connectivity so that no interruptions in sessions happen when video calls are being used in therapy. There have been arguments that telepsychotherapy aided with video calls may dehumanize the therapeutic environment and remove the basic essence of psychotherapy, which was supposed to be a face-to-face treatment. There is a need for therapists to also be aware of issues like setting and place of treatment when online. There must be a clinic like atmosphere, not the background of the house, one must be dressed appropriately, and the same goes for patients as the seriousness of a therapeutic environment needs to be maintained. There is also a need for adherence to time and conduction of the therapy in a professional manner. No distractions and interruptions from family members must happen even if the therapist operates from home. There is a need for psychotherapy courses to have specific modules and training in online or telepsychotherapy in the view that very little about the same is taught in postgraduate psychology programs. Even a diploma course in the same is warranted considering the current situation.[16]

Challenge 11: Institutional and Private Practice Telepsychiatry/ Telepsychotherapy

There is also a huge difference between telepsychiatry practice in a government or medical college set up versus in private practice. Although there have been guidelines that have been set, many a time, private practitioners, particularly in standalone single doctor private clinics, may have their own styles of delivering telepsychiatry care. Many times, in cases of emergencies, there may be a need to issue prescriptions to old patients who have been under the care of the doctor at the behest of relatives. This is more so when the patient may refuse to come on the video call, maybe aggressive or noncompliant with medication prescribed earlier. Sometimes patients may be referred to the doctor via known sources, and he may have to see them and prescribe medications in emergency situations, and this is more so in places where medical colleges or government hospital help may not be possible. This may also be the case where the patient is staying far away from the doctor's clinic and cannot travel for a consultation physically. Thus, all the guidelines may not always be adhered to correctly, and some laxity may be exerted. In a private practice set up, when the referral is through known sources, it may appear rude if the doctor asks for the identification of the patient on telepsy-

chiatry platforms, especially when a patient known to the doctor introduces the new patient as a close relative. These are practical difficulties that are encountered in a private practice set up.[17]

Challenge 12: Telepsychiatry, Telepsychotherapy, and Advertising

The challenge of letting people know that telepsychiatry services exist is one that is fraught with an ethical dilemma. If the doctor puts up posters of his telepsychiatry services along with pictures of himself, it may attract censure as a form of advertisement. There is also a chance that patients may feel that this is a money-making gimmick. There need to be guidelines with regards to the poster, permissible content, and how one may not be pulled up by medical councils when using social and print media to advertise telepsychiatry services.[18] The current telepsychotherapy guidelines laid out speak clearly about misconduct in this regard.[4]

Challenge 13: Certain Issues That Are Specific to Telepsychotherapy

Telepsychotherapy poses its own unique challenges for practitioners and patients alike. It is worthwhile to think whether 45 minutes to an hour of online or telephonic counseling could be at par with face-to-face counseling. This may be mutually decided. There may be difficulties in developing rapport and establishing a sound therapist-patient relationship solely over an online video consult. There are many facets of emotional and body language observations that may not be possible over the video as would be in a clinic setting. Both therapists and patients are not used to speaking into a screen for long times, and even therapy dynamics may not evolve as robustly as in a face-to-face consult. Many aspects of psychotherapy that involve focused conversations between therapist and patient may not be as effective in telepsychotherapy as would be in a regular clinic setting. Rules may also have to be set for missing appointments online, late arrivals and exceeding time limits as would be in regular psychotherapy.[19]

There are other issues that also remain at large. Consent may be obtained via online means or as physically signed to be scanned and emailed. There may be times where an in-person consult may be essential to ascertain facial expression and also to conduct a proper mental status examination.[4] Robust and practical guidelines for telepsychotherapy in the Indian setting are available, and the same is true for family therapy in case of social work via teleconsultation are available.[20]

Effectiveness of Telepsychotherapy Services

There have been multiple studies and systematic reviews that have been done with regard to both computer-assisted psychotherapy and telepsychotherapy services for various psychiatric disorders, while the literature base from India is scarce. The computer-assisted therapies serve as useful means of therapy when there is a scarcity of professionals, and the caseload is high, and when the demand and supply needs are not met with therapists and clinicians in person.[21] These forms of therapy have been useful for the patient who is unable to travel while they can avail therapy at their homes linking many people to systems of care in an affordable manner. Mild cases that may not need direct clinical interventions may also benefit from such services.[22]

There has been one meta-analysis of internet-based cognitive-behavioral therapy (CBT) for depression (four studies) and anxiety disorders (seven studies). The effect sizes reported for interventions targeting anxiety was greater ($d = 0.96$) than for depression ($d = 0.4$). Significant variability in the studies existed, and they concluded that studies that had clinician-based support did better than those with computer-assisted intervention alone.[23]

A review on internet-based CBT found just two papers on the same with good effect, but the study size was too small to give robust evidence, and further evidence for the same remains to be ascertained.[24] Also, many internet-based CBT interventions have been developed by multiple individual researchers from a monetary aspect rather than a rigorous focus on quality. There is a need for good methodological rigor when it comes to developing these online therapies so that the quality and essence of the intervention are retained rather than focusing on financial aspects.[25]

A good amount of literature is available on the internet and web-based interventions for smoking and tobacco cessation, as well as other substance use disorders. Most of these studies have huge heterogeneity in inclusion and exclusion criteria, diagnostic criteria for substance use disorders, and methods used in the web-based and computer-assisted interventions.[26] Some authors have dismissed it as a descriptive feast but an evaluative failure while carrying out meta-analyses of the same. Despite positive effects, many of the studies on smoking cessation and alcohol use had a website that did not cover the key components of cessation treatment as recommended in the national guidelines with huge inadequacies in the accuracy of the information presented and variability in the level of interactive features.[27] Recent better studies have been appearing, albeit with small sample sizes and methodological issues that remain abundant.[28,29]

A systematic review and meta-analysis involving 21 studies and 810 participants found guided self-help to be as efficacious as face-to-face psychotherapy for depression and anxiety and mentioned that we must look at using guided self-help in routine care.[30] A review that looked at 44 studies, 27 of which were randomized controlled trials (RCTs) found that compared with standalone face-to-face therapy, blended therapy is superior. It saves clinician time, leads to lower dropout rates and greater abstinence rates of patients with substance abuse, and help maintain changes got via psychotherapy. However, there is a lack of comparative outcome studies when one looks at the superiority of the outcomes of blended treatments in comparison with traditional face-to-face or internet-based treatments in substance abuse disorders.[31] A recent small review of 15 studies that compared interactional aspects of telephone and face-to-face psychological therapy found little difference between them concerning therapeutic alliance, disclosure, empathy, attentiveness, or participation. However, telephone therapy sessions were significantly shorter than those conducted face to face.[32]

A Cochrane review for internet-based CBT in anxiety disorders in adults reviewed 38 studies (3214 participants) with the use of internet-based CBT for social phobia (11 trials), panic disorder with or without agoraphobia (8 trials), generalized anxiety disorder (5 trials), post-traumatic stress disorder (2 trials), obsessive–compulsive disorder (2 trials), and specific phobia (2 trials), and mixed anxiety disorders (8 studies). The review showed that therapist-supported internet CBT is an efficacious treatment for anxiety in adults. There was also no significant difference in outcome between unguided CBT and therapist-supported internet CBT, and therapist-supported internet CBT may not be significantly different from face-to-face CBT in reducing anxiety in adult patients.[33]

A systematic review of internet-delivered transdiagnostic and tailored CBT for anxiety and depression evaluated 19 randomized trials with a total of 2952 participants. It was concluded that when compared to disorder-specific treatments, there were no differences on anxiety and quality of life outcomes, while there were differences in depression outcomes. Transdiagnostic and tailored internet CBT are effective interventions for anxiety disorders and depression and must be integrated into regular care.[34]

A Cochrane for internet-based psychological therapies in chronic pain evaluated 15 studies and 2012 participants. The therapies reduced pain and disability post-treatment; however, no clear evidence of benefit was found for depression and anxiety. Headache patients benefited the most from such treatments.[35] Another review on the efficacy of therapist-guided and self-guided internet-delivered treatment for young adults with symptoms of anxiety and depression found no significant differences between the two forms of therapies on various aspects of psychological treatment, but overall therapist guided methods had a slight edge over self-guided internet-based treatments.[36] Research in this domain is yet nascent in India, and we need systematically conducted research studies in India that efficiently work across different centers and negotiate cultural barriers and yield evidence to support the need to integrate telepsychotherapy into routine mental health care.

Certain Other Critical Aspects

1. There are guidelines that have been developed for telepsychiatry though we do not have an adequate research base or clinical experience, unlike the west. There is a need for modification of these guidelines as this would be useful information as we go along and encounter newer problems along the way, and multiple revisions in the existing guidelines will be needed as telepsychiatry progresses.
2. There is a need for doctors who practice telepsychiatry to be culturally aware as India is a land of multiple religions and cultures. The patient using the telepsychiatry service may not be from the state or background, and cultural beliefs about mental illness and treatments present in that state must be known to the doctor treating such patients.
3. There will be a need for specialized telepsychiatry services to be developed for geriatric psychiatry, dementia, developmental disabilities, children and adolescents, and women so that patients with specific problems may access specialists to get a proper solution to their problems.
4. Telepsychiatry aided by a local doctor or nurse may be needed when a clinical examination is needed or when some facts and symptoms may not be ascertained over a teleconsult or video call.
5. We need to be digitally sound and aware, digitally literate, and make ourselves equipped to understand all gadgets and equipment we use well before we look at telepsychiatry as a good platform for regular use. A dedicated space for the same, proper background, and other logistics must also be in place.
6. There is a need for therapists and psychiatrists to keep adequate audio and video recording as per the guidelines of the Mental Healthcare Act 2017.[37] There is also a need to explore established online options like online CBT.[38] The role of using virtual reality and other forms of virtual reality interventions using psychotherapy must be explored in the current online therapy paradigm and must be used to the maximum to facilitate a better psychotherapy experience.[39] Couples may also engage in marital therapy online together and separately, and the scope to expand the services for sex therapy to married couples must be explored via online programs and treatment paradigms.[40]

Conclusions

India is a vast country with diverse societies, cities, and communities, and there cannot be a single model of telepsychiatry services. One should not hesitate to develop as may model as necessary, and it would be unfortunate to push for a uniformity concept. The financial and administrative limitations of telepsychiatry in smaller settings should not jeopardize the best possible interest of the patients. Telepsychiatry services need to be based upon a team approach to provide follow-up care. We need to be sure about what can be provided, what cannot be provided, and what should be optional depending upon the confidence of the clinician and his comfort. We may certainly feel confident about doing everything in psychiatry, all treatments, and working with all subgroups, but there must always be a need to set standards and explore newer options and necessities. The risk of litigation, allegations of neglect, the poor risk assessment needs to be kept in mind, along with adherence to rules and regulations. The subject of telepsychiatry is not yet incorporated in postgraduate and undergraduate training, and there is no well evaluated, peer-reviewed program to support it as a service where we can improve efficacy in terms of outcome deliverables. Telepsychiatry is here to stay, and we need to make it a very viable model for the country just as it has stuck for the west. We must also keep ourselves abreast of the advantages of virtual reality and the need to incorporate the same in telepsychiatry and telepsychotherapy as the future of this field shall be immensely technology-driven.

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Prescribing Psychotropics: Perspective From Telepsychiatry Operational Guidelines 2020

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ABSTRACT

As telemedicine gained both importance and momentum following COVID -19 pandemic, Telemedicine Practise Guidelines (TPG) March 2020 was notified by the Central Government of India. Following the above, the Indian Psychiatrists Society, Telemedicine Society of India (TSI) and National Institute of Mental Health and Neurosciences (INI), Bangalore came together to address the specific needs of Psychiatrists practicing tele consultations, there by releasing Telepsychiatry Operational Guidelines 2020. This article discusses the guidelines outlines in the above documents with respect to prescribing psychotropics. We have discussed the thought process behind formulation of Telepsychiatry Operational guidelines, the challenges that may arise while following the above guidelines with possible solutions.

Keywords: Telepsychiatry Operational Guidelines, Telemedicine Practice Guidelines, online prescriptions, e-pharmacy

Telemedicine in psychiatric care has opened avenues for individuals in need of psychiatric services ranging from consultation, obtaining medications, and obtaining nonpharmacological interventions. In the recent past, the Government of India has notified guidelines for telemedicine practice, *The Telemedicine Practice Guidelines—March 2020* (TPG).[1] In lines with the above document, *Telepsychiatry Operational Guidelines—2020* was brought forth to tailor the use of Telemedicine in psychiatric practice. In this article, we would discuss the guidelines concerning psychotropic medications. "Psychotropic drug" is defined as any drug that can cause a change in mood, emotion, or behavior.[2] We will discuss the pros and cons of the guidelines, about writing an online prescription, on how to ensure that medications reach patients following a telepsychiatry consultation, and the ethical issues involved in all of the above.

During a teleconsultation, the psychiatrist has the responsibility of prescribing appropriate medications to the patient wherever required. Although the rules of Narcotic and Psychotropic Substances Act, Drug and Cosmetic Act 1940, and Rules 1945 apply while prescribing any medication similar to a traditional in-person consultation,[3] still some differences need to be understood while prescribing during a telepsychiatry consultation. Although there are some restrictions as to what drugs can be prescribed online and in what context, the same clinical practice guidelines that are applicable for in-person consultation also apply here. Telepsychiatry Operational Guidelines describe the process involved in prescribing medication, that is, psychotropics from a psychiatrist's perspective following a psychiatry teleconsultation.

Prerequisite Before Prescribing Psychotropics Online

Prerequisite before prescribing psychotropic medication online is that the psychiatrist should arrive at a provisional or final diagnosis following a consultation; the mode of consultation can be audio/video/text. During a teleconsultation, if a psychiatrist is unable to arrive at a diagnosis, then an in-person meeting needs to be considered.

Prescribing medication following telepsychiatry consultation depends upon the following factors:

- Type of consultation: first or follow-up consultation
- Mode of consultation: text/audio (telephonic consultation)/videoconferencing
- The appropriate list of medicines suitable for a prescription will depend on the above two criteria

It is important to note that psychotropic medications should be written in generic names.[4]

The Board of Governors in Supersession of the Medical Council of India with previous sanctioning from the Central government of India notifies the list of medications in various categories from time to time.[1] Groups of drugs that can be prescribed following a teleconsultation are as follows:

1. **List O:** This includes over-the-counter drugs (OTC) that need to be readily and easily available to the general public and can be dispensed without a prescription, for example, paracetamol, antacids, ORS, vitamin supplements, tincture iodine, and cough lozenges. In times of public health emergencies such as epidemics and pandemics, this list will also include all the necessary drugs relevant to the health emergency situation.[1] List O does not contain any psychotropic medications. Any individual cannot procure psychotropic drugs without a valid prescription.[5]
2. **List A:** Drugs in list A are relatively safe and have a very low risk of abuse. These can be prescribed after the first consultation on video only and on subsequent "follow-up telepsychiatry consultations," which may be audio/video/text-based for re-fill prescriptions.
3. **List B:** This includes drugs that can be used as an "add-on" for the ongoing psychiatric prescription and are needed to optimize the treatment. The psychotropics in this list can be prescribed on "follow-up consultation" only, which can be via text/audio/video mode. The drugs in this list may change from time to time, depending upon the notification from the Governing Bodies representing the Government.
4. **List C:** This includes drugs that "cannot be prescribed" after a tele-consultation. This list includes Schedule X drugs of the Drug and Cosmetic Act 1940 and Rules 1945, and drugs that come under the purview of narcotic and psychotropic substances listed in the Narcotic Drugs and Psychotropic Substances Act 1985, for example, methadone, ketamine, zolpidem, codeine, and benzodiazepines.

Following the notification of the Telemedicine Practice Guidelines, it remained to be clarified how a psychiatric consultation and prescribing psychotropics should be carried out and which psychotropic should figure in which of the list of drugs. It was in this scenario that various professional bodies took up the responsibility to segregate the psychotropic medications into the lists. The Indian Psychiatric Society (IPS), Telemedicine Society of India (TSI), and National Institute of Mental health Neurosciences (NIMHANS), Bangalore, came together to create a separate guidance document on telepsychiatry practice guidelines.[6]

Although the task of deciding the drug list appeared to an easy job, multiple factors needed consideration. The main goal was to populate the lists so that it would bring clarity for the prescribing telepsychiatrist while at the same time ensuring the benefit for patients and also ensuring compliance with other legal statutes. Therefore, the authors took two approaches which are described in **Table 1**.

TABLE 1.

Approaches to Deciding the Psychotropics in the Various Drug Lists of the Operational Guideline

	Approach 1: Including All First Line Treatments for Various Psychiatric Disorders in List A	Approach 2: To Include Essential Drugs in List A and Rest in List B
Pros	• Psychiatrist will have the advantage and ease of following treatment guidelines. • Psychiatrist can make a treatment decision in collaboration with the client, which would allow the client to take decision after understanding the details of the drug: its mechanism of action, adverse effects with the available evidence.	• Only those with a firm diagnosis will receive prescription. • Where the diagnosis cannot be arrived or when psychiatrist perceives the need to evaluate in more detail, he/she can insist on in-person consultation before considering giving out prescription based on the limited information available. • A RMP or health worker following collaborative consultation with a psychiatrist online can make psychotropics available to the patients. • Any RMP who has undergone DMHP training in primary care psychiatry can prescribe psychotropic drugs, since essential drugs need to be made available in all health care settings, it would be easier for the RMP to prescribe without the patient facing difficulty is procuring psychotropic drugs. • All the basic psychotropic drugs are available in peripheral health settings.
Cons	• First-line psychotropic drugs will vary depending on multiple factors, such as predominant symptomatology, age of the patient, presence of comorbidities, special population such as pregnancy and lactation. • There are numerous guidelines/protocols available for psychiatric illness management. • All drugs may not be available and cost of drugs varies from each other; therefore, choosing few drugs over the other may create bias. • List A drugs should be safe and low potential for abuse, which cannot be ensured for all psychotropic drugs. • As per TPG, RMPs can prescribe list A drugs in the first visit, if many psychotropics are included in list A, Medical Officers with DMHP training alone may find it challenging choose a drug from a very elaborate and lengthy list A.	• Psychiatrist might feel constrained with the list containing only few drugs. • Drugs which a client can benefit in the first consultation—the psychiatrist may have to wait till follow-up consultation to consider particular drug.

TPG: *Telemedicine Practice Guidelines*, RMP: registered medical practitioner; DMHP: District Mental Health Program.

TABLE 2.

Psychotropics Drugs in Each Category of Drugs[6]

Category	Antidepressants	Antipsychotics	Sedative Hypnotics/ Benzodiazepines	Other Oral Psychotropic Medication	Injectable
List A	Imipramine Escitalopram Fluoxetine	Haloperidol Risperidone Olanzapine	Clonazepam[a] Clobazam[a]	Mood stabilizer Lithium carbonate Carbamazepine Sodium valproate Antiepileptic drugs Phenobarbitone, Diphenyl-hydantoin Anticholinergic drugs Trihexyphenidyl	Inj. fluphenazine Inj. haloperidol Inj. promethazine
List B	Sertraline, paroxetine, desvenlafaxine, mirtazapine, citalopram, duloxetine, venlafaxine, doxepine, clomipramine, nortriptyline, bupropion, amitriptyline, fluvoxamine, and other antidepressants	Aripiprazole, quetiapine, clozapine, lurasidone, ziprasidone, chlorpromazine, paliperidone, iloperidone, amisulpiride, asenapine, zuclopenthixol, flupentixol, etc.		Mood stabilizers Oxcarbazepine Lamotrigine Divalproex sodium and other drugs Anticravings and aversive drugs Disulfiram Topiramate Baclofen Naltrexone Acamprosate and other anticraving agents Anti-dementia drugs Donepezil Rivastigmine Memantine and other drugs used in the treatment of Dementia Anti-ADHD drugs[b] Atomoxetine Clonidine Modafinil and other drugs	[c]Injectables prescription for depot Inj. zuclopenthixol Inj. flupenthixol
[d]List C	–	–	Zolpidem Diazepam Lorazepam and other sedative hypnotic drugs	Methadone Buprenorphine Ketamine Morphine Tramadol Codeine	

Source. Adapted from *Telepsychiatry Operational Guidelines-2020*, Indian Psychiatric Society and Telemedicine Society of India in collaboration with National Institute of Mental Health and Neurosciences (Institute of National Importance), the list has in turn been adapted from Essential drug List of MHCA 2017.[7]

The above list broadly consists of the psychotropic drugs notified by the central government. The drugs in various categories may vary from time to time depending on the amendments and modifications put forth by the Board of Governors, Medical Council of India. [a]Benzodiazepines: clonazepam and clobazam were included in list A after amendment by MCI.[9] [b]Anti-ADHD drug methylphenidate cannot be prescribed via teleconsultation neither in first consultation nor in follow-up. [c]Injectable prescription is to be given only after Collaborative Consultation with an Registered Medical Practitioner or health worker. [d]List C drugs can never be prescribed by a psychiatrist after a teleconsultation—first/follow-up consultation.

After much deliberation in the professional bodies like TSI, IPS and NIMHANS, Bangalore, the authors thought it logical to include all the essential psychotropic drugs (enlisted under MHCA 2017) in list A and the rest in list B. This approach seeks to ensure that psychotropics so included in list A will be of the safe type, having a low potential for abuse, and of ready availability and accessibility. The list, however, is not the final one and would be revised from time to time, depending on the notifications by the Medical Council of India or other Governing Bodies. **Table 2** broadly lists various drugs in list A, B, and C

Strengths of the List of Drugs in Telepsychiatry Operational Guideline 2020

The Telepsychiatry Operational Guideline is the first of such guidelines for any single specialty, catering to specific needs and requirements of psychiatry. The categories and list of drugs provide a clear idea about which drugs can be prescribed by a psychiatrist online and which cannot be, thereby preventing indiscriminate prescription of drugs and providing a legal safety net to the psychiatrist when a particular medication is not prescribed. The categorization is simple and easy to follow. The medications in list B being exhaustive allow the psychiatrist to choose a psychotropic from a wide range of psychotropics in follow-up teleconsultations. List B includes most classes of psychotropics that are usually prescribed for treatment of psychiatric illness for both common mental disorders and severe mental disorders. Depot antipsychotics have considerable benefits in the treatment of schizophrenia, especially in ensuring treatment adherence.[9] Antipsychotic drugs in list B include depot antipsychotics (e.g., fluphenazine decanoate in list A; zuclopenthixol decanoate

and flupenthixol decanoate in list B) also, thus enabling the psychiatrist more choice to choose from.

Areas Where There Is Scope for Further Deliberation

List A consists of only three antidepressant drugs: imipramine, escitalopram, and fluoxetine. Among the tricyclic antidepressants (TCA), amitriptyline is the commonly prescribed TCA,[10,11] which is currently notified under list B (which means a psychiatrist can prescribe it only in follow-up). Being a widely prescribed antidepressant, including it in the list A would be beneficial to patients.

Prescription patterns of benzodiazepines show that clonazepam is the most commonly prescribed benzodiazepine, followed by lorazepam and diazepam.[10,12] Current guidelines restrict prescription to clonazepam and clobazam only. Diazepam and lorazepam are the essential drugs that are supposed to be available in all government health establishments.[7] Therefore, prohibition on prescribing diazepam and lorazepam through teleconsultation needs to be relooked at, especially when telepsychiatry collaborative consultation is carried out with a registered medical practitioner (RMP) or a health care worker from a primary care setting. The above described are a few areas where there is scope to add more psychotropic medications in list A. More such additions and revisions in the lists may be required as the number telepsychiatry consultations increase that will enable to draw evidence from experience, which would make it possible to put forth the felt need to the governing bodies to make the necessary changes in the lists of medications (list A, B, or C).

Methods of Generating and Issuing a Prescription

Whenever a prescription is issued (in whatever manner it is), the rules of Indian Medical Council Regulations 2002 should be adhered to.[13] A prescription can be either handwritten or digitally generated. It should contain the generic name of the drugs in clear legible handwriting, preferably in capital letters, with the signature of the psychiatrist when it is handwritten. If it is a digitally generated prescription, then the generic name of the drug should be mentioned in capital letters along with a digital signature. The psychiatrist's signature should be accompanied by his/her name, designation, and affiliation. Then, the prescription so generated can be sent either as a photo or as a scanned copy through appropriate communication mode, which can be either via email or via WatsApp or similar platform. It is prudent to document the phone number/email (to which the scanned copy of the prescription is sent) in the consultation notes. Then, the patient can approach the pharmacy of his choice to obtain the prescribed medications.

Ethical Issues of Prescribing Medications and Dispensing Medications

As per the "Indian Medical Council (Professional Conduct, Etiquette and Ethics) Regulations, 2002 (Amended on 2016)," registered medical practitioners are not supposed to run an open shop for the sale of medications other than those prescribed by himself. Despite this, in India, many clinicians prescribe and dispense medicines by themselves.[14] When the same person prescribes and dispenses drugs, it can lead to a conflict of interest. The conflict is between adhering to the best possible practice guidelines and the financial gains of the clinician. This practice has been reducing in metro cities, but it is still widely prevalent in rural and semi-urban areas.[15] Another probable issue is the availability of only certain psychotropic medications in the patient's location wherein the psychiatrist has minimal choices and may need to prescribe the drug that is readily available and accessible for the patient.

With the government giving the nod for telepsychiatry practice, the above-mentioned ethical issues will take a newer shape with newer ethical conflicts. When a psychiatrist prescribes medications to a patient residing in a metro or semi-urban area, he/she will have multiple pharmacies where they can approach and get the drug. If the patient is from a rural area, then obtaining prescribed medications will be an additional task for which he/she will have to travel to an urban place, which will defeat the main purpose of telepsychiatry. Few psychiatrists might prefer to send the medications through parcel services to their patients and collect the medication fee; this arrangement can be considered in the current situation of pandemic (lockdown). Still, otherwise, this is akin to doctor selling medications by himself as in in-person consultation. This invites a similar conflict of interest, where the psychiatrist dispenses a particular brand of psychotropic medicines directly to the patient by taking payment for monetary profit.

E-Pharmacy

E-pharmacy is an Internet-based service, where the patient can upload his/her prescription to the E-pharmacy website and then E-pharmacy will deliver the medication to the specified address. E-pharmacies have been in the Indian market since 2015 when the Indian Internet Pharmacy Association formed. E-pharmacies are supposed to adhere to the Drug and Cosmetics Act 1940, Drugs and Cosmetic Rules 1945, Pharmacy Act 1948, the Indian Medical Act 1956, and Information Technology Act 2000.[3] Of late, there has been a surge of E-pharmacy websites, and it is expected to grow by nearly five times by 2022.[16] After the telepsychiatry guidelines have been released, E-pharmacies have assumed a greater role in the delivery of medications to patients. In India, E-pharmacies are not governed by any specific law or regulatory body, whereas developed countries like the USA, Canada, and Australia have legal, regulatory organizations like the National Association of Boards of pharmacy to regulate E-pharmacies. These regulatory bodies help customers in identifying real and fake E-pharmacies, and hence a need for such a statutory authority in India.[3] There is a potential conflict of interest area here as well: if the E-pharmacist ties up with a specific manufacturer and keeps the products of only that manufacturer, it would mean no option for the patient to choose from, which we strongly discourage. Another conflict of interest zone is when the drug manufacturer himself/herself opens an online portal for the delivery of prescribed medications. Doing so might break the rules of Pharmacy Act 1948, which mandate that only licensed pharmacists can sell the medicines.[15] However, these issues can be curtailed by (a) doctors prescribing only generic medication, which is also a mandate by the Medical Council of India,[4] (b) E-pharmacy providing list of all brands, and its cost. A "one drug one price" policy is another way

to solve this problem. All drugs may be brought under "Drug Price Control" too.

Privacy Issues

Section 23 of the Mental Health Care Act 2017 speaks about the "Right to confidentiality" of the patient, but TPG mandate mentioning of diagnosis on the prescription guidelines. Writing the diagnosis on the prescription will mean revealing the patient's illness to anyone who comes across it even by chance. Therefore, while generating a prescription psychiatrist should not violate both legislations mentioned above and mentioning the ICD or DSM code of the diagnosis is a suggested solution. With the ongoing integration of technology into health care delivery, there is the possibility of integrating electronic health records with E-pharmacy soon. When that happens, the option will arise of directly sending the prescription to the E-pharmacy companies with the patient's concurrence for dispensing the medication.

Conclusions

Newer opportunities, challenges, and ethical issues arise with the official notification of Telemedicine and telepsychiatry. The opportunities include making health care accessible even to a person staying in the most remote of the places, obliterating the logistics barrier. The main challenge lies in ensuring that not just the psychiatrist's opinion reaches the patient but also the required medications, especially to those who are living most remote place. The main ethical issue that might arise is psychiatrists selling medicines or foreign pharma companies selling pills or pharma companies venturing into the area of selling their drugs directly to patients. Our recommendation is to have a regulatory body to supervise activities of E-pharma companies and protect the interests of the patients.

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Data Handling for E-Mental Health Professionals

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ABSTRACT

Digital psychiatry and e-mental health have proliferated and permeated vastly in the current landscape of mental health care provision. The COVID-19 crisis has accelerated this digital transformation, and changes that usually take many years to translate into clinical practice have been implemented in a matter of weeks. These have outpaced the checks and balances that would typically accompany such changes, which has brought into focus a need to have a proper approach for digital data handling. Health care data is sensitive, and is prone to hacking due to the lack of stringent protocols regarding its storage and access. Mental health care data need to be more secure due to the stigma associated with having a mental health condition. Thus, there is a need to emphasize proper data handling by mental health professionals, and policies to ensure safeguarding patient's privacy are required. The aim of useful, free, and fair use of mental health care data for clinical, business, and research purposes should be balanced with the need to ensure the data is accessible to only those who are authorized. Systems and policies should be in place to ensure that data storage, access, and disposal are systematic and conform to data safety norms.

Keywords: Cyberpsychiatry, epidemiology, qualitative, review

The use of telemedicine and digital platforms by the mental health professionals has accelerated during the current COVID-19 pandemic.[1] Keeping in mind the need for such services during the pandemic situation, the Government of India has provided guidelines for running such facilities.[2]

Telepsychiatry is a field in its own right and has been gradually increasing in scope and application. The ecosystem of telepsychiatry has changed from being telephone-based to digital platforms. Telepsychiatry permeates marketing and listing of mental health services, booking appointments, conducting interviews and therapy, documentation, prescription generation, medication delivery, scheduling follow-up, and other activities. Various mental health sub-specialties can expand in scope and improve the delivery of services due to the potential of telemedicine.[3] The promise of psychiatric services in remote areas by using telepsychiatry has made it one of the important components of telemedicine services.[4] Digitalized medicine is another framework that includes using digital services and devices, whether connected to the internet or not, in the provision of medical services. This includes push toward moving to computerized records instead of handwritten ones and using digital devices in the processes of providing care to the extent possible.

Many countries are already moving toward a national health record for its citizens, which is assessable by health care providers irrespective of location.[5,6] There are considerable benefits in terms of streamlining health care experience, reducing the need for repeat investigations and assessments for the same conditions. Australia is a prime example of this. Most Western countries have well-defined standards and protocols in place for generating, recording, storing, and disposing of health care data. Similarly, specific legal statute are governing the same.

Expansion of telemedicine and digital services draws attention toward appropriate handling of the data. Digital health care data is particularly insecure as health systems are not designed with security in mind. At the same time, it is one of the most valuable data from the perspective of privacy[7] and health research.[8] There have been reports of health care data being hacked and then made available on the dark web.[9] The breach of mental health care data is more sensitive than a breach of several other health care conditions, as considerable stigma still applies to psychiatric disorders. Additionally, the same can have more extreme legal implications compared to the data from different specialties.[10] Thus, psychiatrists and other mental health professionals need to be aware of the issues related to data generation, handling, and disposal. This write-up aims to discuss topics related to data handling relevant to mental health professionals. This article does not intend to go into the depth of the technical and computational aspects of data handling and access. Still, it provides a pragmatic overview of the issues involved in the generation and storage of the data in general.

Definition

Telepsychiatry is "the delivery of health care and the exchange of health information for purposes of providing psychiatric services across distances,"[11] while digital medicine (of which digital psychiatry is a part) is "all the theory, knowledge, technology, and methodology which are involved in solving medical problems using modern digital technology in basic science, clinical medicine, preventive medicine, and so forth, to increase our understanding of life phenomena and the nature of disease as well as to improve clinical diagnosis and treatment."[12]

Data and its Facets

Data has been conceptualized differently by different experts[13] but one of the appealing definitions is that data are the primary individual items of numeric or other information garnered through observation. Still, in themselves, without context, they are devoid of information. Data from the perspective of digital psychiatry is any discrete information that is stored in a digital device and pertains to information about the patient, process of

care, research, or secondary analysis of this information.

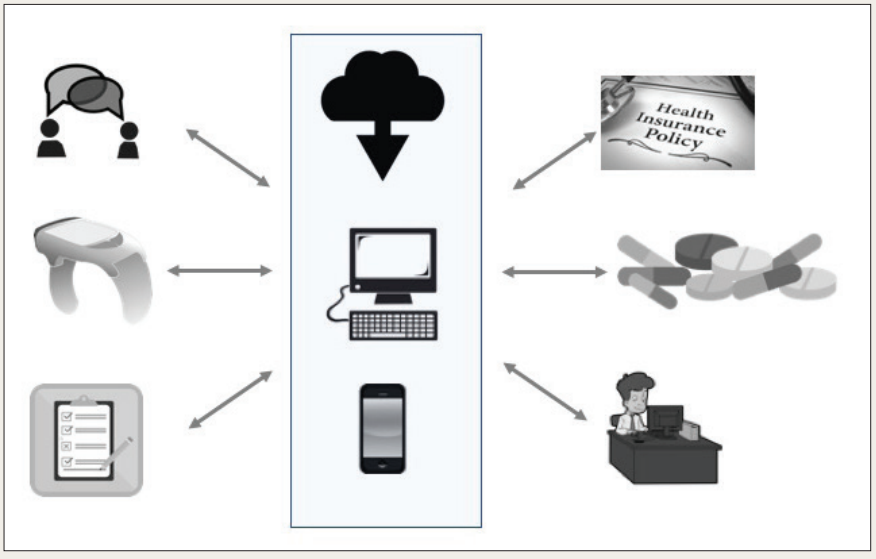
The potential sources of data of relevance to mental health professionals are depicted in **Figure 1**. The source of data can be the interview and assessment process, which can be audio or video recorded in a digital format. Data processing and extraction can be used to convert audio data into text. The information from the intake interview or subsequent mental health professional encounters may be coded into text either by writing the same information or using the audio into the text form by using various software. This process is similar to the notes prepared after an interview, which are stored in files. Current technologies also allow for recognition of handwriting, conversion into text, and textual digitalization of old records as the conversion of text into speech. This data is important as it provides information to other mental health professionals about what was the psychopathology, clinical concerns in a particular case, management plan formulated, and treatment offered. This information would be quite valuable to understand previous treatment approaches and what can be done in the future. Smartphone, wearable device, or computer-based applications can also be used for assessment of mood charting, administration of psychiatric rating scales, and momentary ecological assessment.[14,15] Nursing records also provide information on the physical and mental health conditions. Additionally, the advent of real-time data through sensors are emerging avenues of data collection. Hand movement ascertained through actigraphy, originally used for sleep research, has been used to look at conditions like attention deficit hyperkinetic disorder and delirium.[16,17] As the integration of sensors occurs more seamlessly with wearable devices, it is hoped that minimally obtrusive observation of many psychiatric conditions would occur in the natural home or work environment, and not just in the mental health professionals' "chambers." Other data sources include billing information linked to the mode of payment and other financial information; insurance information about the patient, including the diagnoses, sums reimbursed through insurance, and the reasons for declining claims; and management of inventory including medications (especially when stocking regulated medications like buprenorphine). The potential application of the digital data-based aspects of psychiatric health care is not limited to the above, and many other potential applications are being tried, tested, refined, and implemented in the current circumstances. As mobile phones have become ubiquitous, many research and commercial applications are now available to extract the data from the device sensors to study physiological functioning. For example, stress and nonstress conditions can be differentiated by monitoring electrocardiogram using a chest strap sensor and galvanic skin response using finger sensors and a wrist cuff. This data can be transmitted reliably to a server via Bluetooth.[18]

A related consideration in the mentioned scheme of things is the storage of the data. Traditionally, patient information has been stored in hardcopies of files, typically for at least five to ten years, with the ownership of the data resting with the patient. The digital revolution has allowed storage of data in the form of binary codes that is stored in disc drives. Texts, images, audio, and video are the common types of data from the health care setting that are stored. Localization of the stored data in disc drives in fixed computers and laptops and pendrives has given way to storage of data on mobiles, and access through the internet in remote locations. Uploading data in the "cloud" servers and accessing the data through intranet or internet has become commonplace. As the clinical data moves from paper files that can be physically locked to digital format across devices and often communicated via the internet, it becomes increasingly susceptible to unauthorized access and hacking. For example, electronic medical records got locked due to a ransomware attack on Grays Harbor Community Hospital and Harbor Medical Group.[19]

Data access (i.e., who has access to the digital information and by what means) is a crucial consideration for telepsychiatry and digital psychiatry. Ownership and access to the data within regulatory framework are some of the questions that are being deliberated upon. If the patient is the source of data, the health care provider is also a cocreator of the data. Many regulations over the world do recognize the privacy of the data of the patients, and unauthorized use is punishable. For example, the UK Data Protection Act of 2018 has a provision of penal fine of up to 17 million pounds

FIGURE 1.

Potential Sources of Data for Mental Health Care Practice



Note. Electronic data related to mental health can be generated from patient interviews; smart devices; nursing records, specialist referrals and consultations, and self-filled checklists (can be through mobile devices); insurance claims and information; medication inventories; and administrative, scheduling, and billing sections. Information can be stored in mobiles, computers, or in the cloud.

on the organization using patient data without consent after permission from Confidentiality Advisory Group for serious breach if there is a failure to comply with the provisions and guidelines of data handling.[20] Yet, the data curating and hosting services do have authorized access on as-needed basis. Similarly, health care providers have required access to the data for promoting the health of the patients and populations. Standards have been spelled out about data safety of electronic health records, both in terms of technical specifications and administrative requirements.[21] The individuals or entities that are likely to have access to the data are the patient, clinician, receptionist or administrative staff, computer professionals who have set up the system and maintain it, and those who have access to cloud servers if the data is stored in the cloud. Similar to the paper medical records format, health care regulating authorities and law enforcement agencies, including judiciary, may request for particular records. However, there needs to be a guidance for professionals and public, who are the main stakeholders. Hackers can gain access to the data when they mount an attack. However, data can become accessible to unauthorized personnel when nonencrypted files are available through lost or discarded pendrives, computers, and laptops; and when individuals have left their stations/devices without "logging out" of the health care data portal. Therefore, there is a need for individuals to understand the importance of such an act. Therefore, this needs to be part of induction training before getting involved in providing telepsychiatry services. Maintaining confidentiality of the data of patient information is everyone's responsibility and all professionals need to understand that there are different aspects involved.

The electronic data in mental health care, both online and offline, can have multiple potential uses.[22] The data can be of use to the patients to know the records, timelines, and appraisal of their mental health, especially when they need to switch between different health care providers. Such electronic data may be useful for the mental health professionals to know salient features of patient's history, management, and course of illness. It may also be helpful for researchers to gain insights into the determinants of health and diseases and outcomes of patients with different interventions. For example, the research data can be used for suicide prevention and research on the long-term course and outcome of psychiatric disorders.[23,24] The digital information is of use to insurers in actuarial sciences, in determining the risk of diseases, and the suitable premiums. Activity data may also be of relevance to engineers who would like to develop wearable devices for specific purposes, for example, having an indirect estimation of drug responses in depression.[25] The electronically generated and stored information might be of consequence to the regulatory authorities to understand the adverse effects of certain drugs or interventions. Hospital administrators and managers may use health data for benchmarking, service utilization, and revenues. The blended data can be used at the state and national levels to inform public health policy and for allocation of funding for specific conditions. The pharmaceutical industry (and the health care industry in general) may be interested in the real-time sales data to estimate the demand for particular medications or pharmaceutical products. The finance industry may find the data relevant (if such data is accessible) to determine the credit-worthiness for certain individuals, especially if they are suffering from specific disorders. Advertisers may look at the volume of electronically stored data from one particular demographic where they would like to promote a product. Thus, the value of the mental health care data would be different for different entities based upon their profile, goals, and directions.

Handling of Data and its Importance

The above discussion underscores why the handling of data has to be given due consideration in the field of mental health. Following are some of the issues that are relevant to data handling.

1. Determination of the storage medium: The storage of data can be on a laptop, desktop, local server, or the cloud, or any other medium. Using pendrive for data transfer can be unsafe as pendrives can get lost or accessed without authorization. Hence, such a transfer should be minimized and anonymized if possible. Discarding of the storage medium after use should also be paid attention to, as that can be a source of data leakage. For paper records, medico-legal statutes usually require the health care provider to maintain records for a fixed time period before they can be disposed of. Hence digital data, too, must be appropriately stored and backed up to ensure compliance. Similarly, as for paper records, any post hoc alteration must be suitably recorded by digital means.
2. Encryption of patient data (encoding of information) and other security protocols: Data encryption helps to protect the data even if it is lost in transit or is accessed by unauthorized personnel. Several encryption strategies are available[26] but efficient data encryption methods are required to make the data available and minimal time and computation power is needed for encryption and de-encryption process. Similarly, other security protocols should be in place for the secure transmission of data. Password protection of data is one of the most conventional ways of access controls which ensure security. End-to-end encryption has been provided in messaging and calling applications such as WhatsApp, Telegram, and Line. Telemedicine guidelines do mention WhatsApp as an application that can be used.[2] Ability to make voice calls, video calls to talk to the patient and their caregivers, and sending e-prescriptions as a document, along with the ability to have text conversations, makes it an appealing application for telemedicine. Secret chat in Facebook Messenger also provides end-to-end encryption.
3. Access control policies: This pertains to the legitimate access holders of the data. The more the number of individuals who have access to data, the more are the chances of it

being compromised. Access control policies should spell out who shall have access to the data (complete or partial) and in what circumstances. Such policies, when written and known in a health care organization, help to create an environment of trust and accountability regarding patient data. Also, different access categories can be given entry to various segments of the data. For example, mental health professionals may have information of mental health records, but not billing documents. In contrast, administrative staff may have access to scheduling and billing records, but not psychiatric care records.

4. Access loggings: This pertains to the access to the data by different individuals being logged. The log provides information about who all accessed the data (e.g.,, the doctor, nurse, secretarial staff), and when. This may be helpful to trace unauthorized access to data,[27] especially in the situations of data hacking.
5. Automatic logout: Patient data may be unknowingly exposed to third parties when the last session had not been logged out. Automatic logout after a defined period of inactivity may reduce the chances of such inadvertent access to the health care data.

The handling of data is ingrained in the process of online consultation and needs to be in accordance with the locally relevant guidelines. The telemedicine guidelines in India[2] have provided some clarity in the manner in which telemedicine services are to be provided and what measures are to be taken in the teleconsultation process. Some elements should be considered while providing services.[2] These apply to both treatment and prevention of diseases, and for research purposes. Additionally, it is recommended that log or record of telemedicine interaction and patient records, prescriptions, reports, documents, images, diagnostics, and data (both digital or nondigital) should be retained by the registered medical practitioner. The invoice of the appropriate fee charged by the practitioner should also be provided. Prescriptions, when issued, should not be in contravention of the provisions of the Drugs and Cosmetics Act and Rules. A photo, scan, digital copy of a signed prescription or e-prescription to the patient via email or any messaging platform can be sent, with explicit mention to the patient that he/she can get the medicines dispensed from any pharmacy of his/her choice.

Big Data Analytics

Big data has come up in health care in a significant manner, due to the collation of large patient databases, and advancement in the computational powers and techniques like machine learning.[28] Extensive data in the cloud and distributed systems offer an opportunity to access volumes of data to make consequential inferences. Machine learning algorithms on the more massive data sets have resulted in gaining insights about diagnostics and therapeutics. Deep neural networks can be used and tested with the voluminous merged data from different practices and health care institutions. Data mining from big data is another exciting field that entails getting data of interest from a plethora of data that has been collected. One of the essential steps in big data analytics is the de-identification of the data. This means that identifying details of the patients are coded or removed so that the condition in question is available for analysis without providing details, which may lead to a breach of privacy. The data which are generally de-identified are name, social security number (or Aadhaar number in India, PAN card number or bank details), pin code, and date of birth.

Different Data and Reconciliation

One of the main challenges in compiling and comparing data has been different architectures of data storage. Each of the data systems may have its own defined data capture fields, delimitations, access codings, compression algorithms, and supported operating systems. Automatic cross talk and data conversion across platforms are still a challenge. Hence, data of patients from different sources are reconciled first while aggregating across sources. This might require the use of dedicated software "middleware" for data exchange to occur.

Unique Situations Impacting the Handling of Data

There can be several circumstances when the handling of data may become challenging for mental health professionals. Therein, the usual protocols, means, mechanisms, and statutes may be called up into question. Some of these situations are discussed further.

TABLE 1.

Recommendations for E-Mental Health Professionals for Handling Data

Do consider what data are to be collected from patients, where would that data be kept, who all would have access to the data, and to what component(s)of the data?
Ensure that all the mental health professionals are provided induction training and are updated regularly on local policies and protocols, including data security, login and logout protocols, and data handling.
Separate traceable logins should be available for each individual who has access to the patient data.
Use software and data storage facilities that have data encryption facility and are adept in implementing data security protocols.
Data, when being used for other purposes like research, should be anonymized. Identifying data should be omitted at the time of copying the data. If the data is likely to be used for research, then it is better to inform the patient about it beforehand.
Transfer of the data to colleagues and authorities should be documented by electronic logs in terms of what data was shared, when it was shared, how it was shared, and with whom it was shared.
Automated logout after inactivity should be the norm at the data entry, and access terminals for that pilferage of data can be avoided.
Disposal of obsolete hardware/data storage devices should ensure that the data is wiped clean and securely disposed of.
Incidents of being hacked should be reported to law enforcement or proper regulatory authority.
Exercise reasonable degree of caution while hiring services/ individuals/ applications for technological solutions for telemedicine services, emphasizing on patient's privacy and confidentiality.

Emergencies

During the teleconsultation process, patients may demonstrate the need for emergency care due to a threat of harm to self or others. Such a situation may occur if the patient is suicidal or expresses violence due to psychotic symptoms. Therein, it is crucial to record the consultation appropriately for further necessary action. The subsequent step could be the encouragement of known acquaintances to seek treatment in an emergency setting, or involvement of local law enforcement to defuse the situation. The breach of confidentiality would need to adhere to the telemedical rules and regulations and the legal statutes. The teleconsultation may also serve as evidence in case there is legal fallout of the situation.

Psychotherapy

Online psychotherapy has also gathered steam to prevent the need to travel and physical infrastructure for face–to-face psychotherapy sessions.[29] While psychotherapy has been found to be effective when conducted online, caution has also been expressed about its uptake.[30] The data of the patient emanating out of online psychotherapy can be in the form of digital notes and audio/video records of the session. The documents are potentially instructive, may work well for reflections or teaching material for therapies, and also add-on the patient's mental health profile. However, safe-keeping of such data of the patient also needs to be emphasized to maintain anonymity and confidentiality. Psychotherapy is more appealing to clients when they feel secure and their privacy respected. Ensuring such concerns of the clients are honored would be essential for digital uptake in psychotherapy practices.

Access to Family Members

The Mental Healthcare Act of 2017 mandates that the nominated representative can seek information about the diagnosis and treatment of the patient. However, when the patient does not want the information to be disclosed to family members, then the support needs of the patient may need to be looked at. When there are high support needs of the patient or when capacity is lacking or when the patient is a minor, then the nominated representative would make decisions for the patient and would need information about previous diagnosis and treatment. In such situations, it might be prudent to provide information to the nominated representative. However, when the patient has low support needs, it is better to have consent from the patient (preferably audio-recorded, video-recorded, emailed, or texted) before disclosing information to the relative.

Access to Regulatory Authorities

As the digitalization of services increases, the data is also likely to be under the scrutiny of the regulatory authorities (as with hardcopy case records). Data appraisal and compliance might be required in health care, as has been becoming commonplace with financial data. Data systems would need to be compliant with regulatory standards. The Health Insurance Portability and Accountability Act[31] of 1996 of the United States is one of the initial such regulatory framework implemented to ensure the privacy and security of the digitalized patient data.

The Interface of Data of Different Disorders or Specialties

The internet of things[32] is expanding its footprint, and it aims to interconnect different devices and data streams to improve experience and output, health care in this case. As patient care improves with real-time monitoring of various physiological parameters, treatment decisions are being expedited for several diseases. Remote observation and intervention are becoming possible, with even robotic surgeries being performed by surgeons in a different location. Such real-time data capture and patient monitoring may become commonplace in mental health care, especially for patients who are violent or suicidal, and multimodal inputs, including vocal intonations, sudden jarring movements, and autonomic parameters may be used to develop predictive models and preemptive action protocols.

Data Breaches and Data Hacking

Data breach is an encompassing term that implies that data has been available to nondesignated individuals or entities. The data breach does not mean a malicious intent. It can occur due to data loss or improper data disposal, along with incidents of data hacking that are done with malicious intent.[33] Data hacking includes unauthorized access to the data or blocking the working of data management systems with the intent of obstructing work or getting ransom (ransomware). Over time, health care data breaches have resulted in the loss of data, exposure of identified data to unauthorized personnel, and disruptions in the functioning of the hospitals. Suitable exposure reduction, security enhancement, and organization access control features are likely to reduce the instances of such data breach and hacking. Guidelines and uniform policies would help to bring clarity and standard operating procedures for data handling. The concept of ethical hacking entails hacking with the intent of exposing vulnerabilities, so that corrective measures can be taken to enhance security systems in place, both in the software and in the procedural accesses.

Recommendations for E-Mental Health Professionals for Handling Data

In this section, we provide some recommendations for mental health professionals as they handle the data, from the perspective of telemedicine and digital psychiatry. These are summarized in **Table 1**.

Issues of Consent for the Generation and Use of Data (Clinical and Research)

Prescription—Requirements as per the Telemedicine Guidelines

Incomplete data has several problems associated with it. These can be legal, clinical, and research related. Incomplete data ascertainment can lead to suboptimal care, which may make a practitioner liable to negligence. For example, regularly conducting and documenting mental status examination for a patient with bipo-

TABLE 2.

Suggestions for Data Handling During Conduct of Mental Health Research

Conduct of Research Through Telemedicine
• Consider collecting anonymized data if possible, especially for cross-sectional studies (i.e., avoiding capture of IP address, name, Aadhaar number, date of birth, and pin code)
• Consider using end-to-end encrypted platforms for data collection.
• Consider taking consent using checkboxes developed as an online form. Multiple boxes can be used for different elements of data collection.
• Check the data collection process by dummy entries to check whether data capture is working properly.
• Consider whether the online mechanism of data collection would be used or asynchronous periodic data uploading. If data is not immediately sent, then there is a chance of data loss due to device malfunction, theft, and data corruption.
• Consider beforehand who all will have access to the data (preferably those who have access intimated in a mail).
• Electronic vaults can be used to store the data. Data should be securely deleted after conducting the analysis.
• In case emailing of data is required, or data has to be posted in a repository, then the de-identification of the data should be ensured.
• Consider having ethics committee oversight for the study.
Conduct of Secondary Data Research
• Consider collecting anonymized data, if possible, from the source. Consider minimal information being drawn from the sources.
• Consent might not have been taken from the participants beforehand. Consider having ethics committee oversight for the study.
• Consider beforehand who all will have access to the data (preferably those who have access intimated in a mail).
• Electronic vaults can be used to store the data. Data should be securely deleted after conducting the analysis.
• In case emailing of data is required, or data has to be posted in a repository, then the de-identification of the data should be ensured.
• Certified email systems should be used for the transmission of health data, making sure attachments are password protected. Corporate and subscription-based emails offer better security than free email service. Some health organizations (e.g., NHS) specifically certify their emails to communicate health data.

lar disorder frequently, especially when making decisions about changing medications or considering admissions, would be helpful, especially if adverse outcomes occur and patient's family would like to take to court. The capture of data is related to documentation of data, with the tenet that if it was not documented, then it was not asked (this being similar to hardcopy records). Thus, attempts should be made to provide reasonable comprehensiveness of data, that is, what an adequately trained professional is likely to record or proceed with. The clinical issue with lack or loss of data is that the management plan would be impeded if crucial information is missing. The inadequacy of data may not serve to assist in research and, therefore, policies.

Legal requirements while dealing with data for mental health professionals pertain to Indian Medical Council (Professional Conduct, Etiquette, and Ethics) Regulations, 2002, and with the relevant provisions of the IT Act and the notifications that are issued from time to time regarding the protection of privacy and confidentiality of the patient. The recent Indian telemedicine guidelines mention that registered medical practitioners will not be held responsible for breach of privacy provided that it was caused by technology or some other person, provided a reasonable degree of caution was taken for the hiring of such services. Willful compromise of patient confidentiality is not permissible, for example, misusing patient images and data, especially private and sensitive in nature, using telemedicine to prescribe medicines from the specific restricted list, and soliciting patients for telemedicine through any advertisements or inducements. It is important to be aware of of legal provision from the Information Technology Act (section 22) which provides that anyone who has secured access to any electronic record, book, register, correspondence, information, document, or other material without the consent of the person concerned discloses such electronic record, book, register, correspondence, information, document, or other material to any other person shall be punished with imprisonment for a term which may extend to two years, or with fine which may extend to one lakh rupees, or with both.[34] The section 108 of Mental Health Care Act, 2017, mentions that any person who contravenes any of the provisions of this Act, or of any rule or regulation made there under shall for first contravention be punishable with imprisonment for a term which may extend to six months, or with a fine which may extend to 10,000 rupees or with both, and for any subsequent contravention with imprisonment for a term which may extend to two years or with fine which shall not be less than 50,000 rupees but which may extend to five lakh rupees or with both. This is relevant when considering provision of confidentiality under section 23 of the Act.

An expanding ambit would be the use of telemedicine for the conduct of research or the use of secondary data for research purposes. We offer specific suggestions for dealing with various issues about data handling in such circumstances (**Table 2**). However, there is a need to formulate guidelines for the same. It is important to develop guidelines about safeguards for the patient and families in terms of how their data may be used for research purposes. Several online questionnaire services are now available, such as SurveyMonkey and Google Forms.

Conclusion

As mental health professionals deal with voluminous amounts of data, attention is drawn toward proper handling of the data. Data and its collective analysis are useful for the current patient as well as other patients. Loss of data and its unauthorized access puts the privacy of the patients at risk. Efforts are required to improve the security protocols of data handling to ensure that confidence is retained in the e-mental health services. Continued efforts at improving data generation, storage, handling, and disposal are likely to improve the care, care processes, and outcomes of the patients.

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Telepsychiatry and Medical Insurance: Comparative Perspectives Between India and the United States

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ABSTRACT

Telepsychiatry is a cost-effective alternative to in-person psychiatric consultations. The COVID-19 pandemic brought about a sharp spike in the utilization of telepsychiatry due to ongoing restrictions on gatherings and traveling. In recognition of the importance of telemedicine in general, and telepsychiatry specifically, telemedicine practice guidelines and telepsychiatry operational guidelines have been released. Due to the rising trend in telemedicine, the Insurance Regulatory and Development Authority of India (IRDIA) incorporated teleconsultation health insurance coverage at a level on par with regular in-person consultations. In contrast, in the United States of America, private insurance coverage for telepsychiatry has been in vogue for some time. In this paper we draw comparisons between India and the United States on telepsychiatry and health insurance. We compare the evolving regulatory policies of these two countries in relation to existing insurances plans that are available, the challenges in implementation of new regulations and the possible ways to overcome the challenges to make telepsychiatry affordable to all.

Keywords: Telepsychiatry, insurance, India , US, Medicaid, Medicare, IRDAI

Telemedicine is defined in the broadest sense as "interactive audio, video, or data communication for clinical care provision, provided in place of in-person treatment."[1] Telepsychiatry is a branch of telemedicine that allows clients with barriers to in-person visits to interact with mental health professionals using the telephone or video-conferencing devices. The primary "physical" examination for psychiatric assessment is the mental status examination, which relies on interactive communication to assess emotional state and cognitive functions—this makes psychiatric care adapt well to the use of electronic interfaces. The social-distancing recommendations accompanying the ongoing COVID-19 pandemic have led to an increased demand for psychiatric care provision through telepsychiatry in India and the United States (US).[2] In this article, we compare the medical insurance systems in India and the US with a focus on telepsychiatry and contrast the way the two systems have been able to respond to the recent increased demand for these services.

Health Insurance in India

Health insurance provides payment to health care providers for the cost of a patient's medical treatment, as specified by the insurance plan in which the patient is enrolled. In India, health insurance is broadly categorized into private and public health insurance. Public insurance is provided by the government to the economically poorer sectors and selected vulnerable populations, such as individuals with disabilities. Public health insurance is financed by state and central government funds. A few schemes require insurers to pay a nominal sum as premiums. In contrast, private insurances operate by charging periodic premiums that the insured regularly pays to have ongoing health insurance coverage. There are more than 20 companies that offer private health insurance. Public sector government-owned health insurance companies also provide health insurance coverage by charging premiums similar to private operators: there are about four such companies (**Table 1**). Government health insurance (and assurance) schemes include Employment State Insurance (ESI), Rashtriya Swasthya Bima Yojana (RSBY), Central Government Health Scheme (CGHS), and Ayushman Bharat. Most insurance plans provide coverage for acute or prolonged inpatient care and day-care (ambulatory) procedures. Outpatient medical care is not covered by most public or private insurance companies barring a few exceptions, such as Swavlamban and Niramaya scheme (public) and Star Health Insurance (private insurer).

Based on how payments are processed, a health insurance claim is of two types: The first method is via cashless processing, where bills for services are directly submitted to the insurance agency (third-party payer) by the affiliated hospital. The other method requires the upfront payment of the treatment costs by the patient, who can later file for reimbursement from the insurance agency. Insurance Regulatory and Development Authority of India (IRDAI), a regulatory body that monitors and regulates the functioning of the insurance companies: both public sector and private sector insurance companies (for both health

TABLE 1.

List of Public Sector Health Insurance Companies Owned by the Government

Sl No	Public Sector Health Insurance Companies in India
1	The New India Assurance Co. Ltd
2	United Insurance Company
3	National Insurance Co. Ltd
4	Oriental Insurance

and other general insurance matters). Mental illnesses recently got included in the ambit of health insurance under the directions IRDAI quoting the Mental Health Care Act (MHCA) 2017 (Section 21). Nevertheless, complete mental health coverage is still not embraced by most insurance companies.[3] Preexisting mental illnesses are covered by Niramaya and Swavlamban insurance schemes (which are government health insurance schemes)[4] and by few private insurance companies (for higher premiums).[5]

Insurance Coverage for Psychiatric and Telepsychiatry Services in India

The MHCA 2017 is a milestone in the history of psychiatric care in India and a laudable step toward improving care for persons with mental illness. Section 21 of the MHCA 2017 mandates that every health insurance provider should provide equitable coverage for mental illnesses similar to physical illnesses. This provision in the MHCA 2017 legislation is similar to the Mental Health Parity and Addiction Equity Act introduced in 2008 in the US. Due to the chronic nature of many psychiatric conditions, the limitation on insurance coverage of outpatient services in India is likely to become a limitation to access telepsychiatry consultation. Many clients who have private health insurance are unaware of the option to purchase add-on outpatient services, most likely due to inadequate information provided by the insurance agents, thereby increasing the health expenditure for that individual. Ayushman Bharat, arguably the largest health assurance scheme in the world, does not provide coverage for outpatient consultation, thereby creating a challenge to patients with psychiatric disorders, who generally require continued outpatient care for the long term.

Severe restrictions on travel in India, brought by the COVID-19 outbreak has accelerated the adoption of telecommunication usage into the health sector, and telemedicine has become a considerable boon to health care providers and consumers.[6] Telecommunication-based health services were operational in India even before the COVID-19 pandemic, albeit with no legal framework to provide oversight.[7] The COVID-19 crisis has played a pivotal role in highlighting the benefits of telecommunication-based health services, which has led to the establishment of Telemedicine Practice Guidelines (TPG) on Mar 25, 2020, by the Medical Council of India. TPG provides the legal and regulatory framework for telemedicine practice in India.[8] Soon after TPG, Telepsychiatry Operational Guidelines (TOG) were formulated specifically for psychiatric practice.[9] Subsequently, IRDAI issued a notification to insurance companies to provide insurance coverage for the teleconsultations on par with in-person consultations.[10] It is praiseworthy that IRDAI took such action within two months of the establishment of TPG. IRDAI ascertains that such claims should be in line with the "terms and conditions" in the insurance policy contract issued to the client at the time of premium payment. It may be noted however that only a handful of companies offer outpatient service coverage[5] usually as an add-on; therefore, all policies may not provide coverage for telepsychiatry services, which would essentially count as outpatient health service.

India: Overcoming Challenges with Insurance Coverage for Telepsychiatry Highlighted by the COVID-19 Pandemic

The TPG and TOG allow a psychiatrist to opt for teleconsultation whenever in-person consultation is not possible, or the client and the psychiatrist agrees to choose the "tele" mode of consultation. These guidelines also give an outline of safe and secure methods to maintain medical records of teleconsultations. Financial reimbursements for psychiatric teleconsultation services are not yet standardized in India. Analogous to in-person visits, teleconsultations incur a fee. In India, the teleconsultation fee can be paid either out-of-pocket by the patient or through insurance coverage (which requires more clarity as of now). The lack of standardization of payment coverage for teleconsultations can lead to huge bills for patients.

With regard to public insurance schemes, only a couple of them have provisions for covering outpatient consultations (Swavlamban and Niramaya scheme).[4,11] The flagship Pradhan Mantri Jan Arogya Yojana (PMJAY) under the Ayushman Bharat scheme does not cover Out-patient (OP) consultations,[12] excluding the brief prehospitalization (2 days) and the posthospital (15 days) periods during which it is covered. Understandably this would not come to the benefit of many patients in psychiatry who will require continued follow-up care on an OP basis.

Central Government Health Scheme (CGHS), a health assurance scheme, provides benefits to all present and former Central Government employees. CGHS covers both outpatient as well as inpatient expenses. Recently, in view of the COVID 19 pandemic, the CGHS scheme has enabled teleconsultations for its beneficiaries for certain specialties such as medicine, ENT, eye, orthopedics, but psychiatry was not included.[13] Government schemes such as CGHS and PMJAY should expand coverage to include telemedicine and telepsychiatry service.

Health Insurance in the US

In the US, health insurance is broadly categorized into private and public health insurance (governmental programs). The Affordable Care Act (Obamacare) originated in March 2010 after it was passed by the US congress, establishing basic legal protections for health care: a near-universal guarantee of access to affordable health insurance coverage, from birth through retirement. By 2018, a major portion of the population under the age of 65 got insurance covered either by private health insurance through their employers (67.3%) or by the direct purchase of health insurance (12.2%). Public insurance through Medicare (17.9%) and Medicaid (16.5%) programs that came into existence in 1965 covers 34.4% of the US population.[14] The Center for Medicare & Medicaid Services (CMS) provides administrative oversight over Medicare, Medicaid, and other Federal (central) health care programs, overseeing all regulatory and funding decisions.[14] **Table 2** describes the salient features of Medicaid and Medicare.

The Medicare program is managed by CMS at the federal (central) level and resembles the government insurance program overseen or sponsored by the Central Government in India. Medicare is a uniform national health insurance program designed to cover individuals aged 65 or older, individuals younger than 65 with disabilities, and people of any age with end-stage renal disease. Medicare is primarily funded by taxes from working people to provide services to aged beneficiaries. Similar to government insurances in India, Medicare coverage primarily supports acute care like inpatient hospitalizations and emergency medical conditions. Medicare also supports long-term nursing home care and routine eye care; importantly, outpatient prescription drugs are not covered. Unlike India's public insurance, Medicare beneficiaries can purchase; Medicare-approved private supplemental health insurance to cover their prescription medications.[15]

Medicaid is a cooperative, jointly financed by federal and state health insurance programs for qualifying lower-income adults between ages 18 and 65, pregnant women, and children. It covers preventive, acute, and long-term care services. The federal share of total expenditures ranges from 50% to 83%, with the poorer states receiving a higher match from the Federal Government. In February 2020, 48 state Medicaid programs reimbursed some form of telepsychiatry services.[16] Medicaid reimbursement varies across different states, with ten state Medicaid programs reimbursing fee-for-service for not only general, synchronous or live interactive audio–video conference, the most universally accepted format, but also Remote Patient Management and store-and-forward care provision. State Medicaid policies, rules, and laws are rapidly changing for telepsychiatry, especially since the beginning of the Covid-19 epidemic. The benefit of unprecedented parity for coverage of equivalent psychiatric services by telemedicine in many states is qualified by uncertainty about whether the current funding models will continue once the pandemic recedes.[16]

The majority of the US population is covered by private health insurance. Covered individuals are required to pay a monthly premium for their insurance. State insurance commissioners in the US provide regulatory oversight for over more than 900 private health insurance companies. The federal government does not generally regulate private insurance companies. Minimal coordination occurs between private and public insurance programs; some people have both public and private insurances while others have neither. However, strategically, CMS generally leads the way in setting new policy, with the private insurance community often shifting their coverage strategy to mirror that of CMS.

In the private health insurance arena, The Health Maintenance Organization Act of 1973 established the foundation for managed care organizations (MCO) and their comprehensive cost-saving methods. An MCO is a health plan with a group of doctors and other providers working together to provide health services to its members in a manner organized to manage cost, utilization, and quality. MCO's differ from simple private insurers such as Blue Cross/Blue Shield by being vertically integrated systems that provide not only the insurance coverage to their clients but also the health and delivery system. Often businesses contract with these MCOs to provide health care coverage for their employees. The policy of each MCO dictates many aspects of health care. Provider networks influence how and where a patient receives their medical care. Utilization management, medication formularies, and provider incentives influence the health care delivery options the provider selects (**Table 3**).[17] Coverage for psychiatry, addiction, and telepsychiatry services are determined by the individual MCO and can vary widely.

More recently, large health care systems, such as the Cleveland Clinic, have begun to provide their own health care insurance product to better access their facility for services.

As of 2018, approximately 8.5% (27.5 million) of the US population were uninsured at any point during the year. Nevertheless, persons in the US without health insurance are not devoid of health care options. Although uninsured patients receive fewer and less coordinated services than individuals with insurance, many uninsured patients receive health care services through public clinics and hospitals, state and county public health department programs, or private providers who finance the care through charity by shifting costs to other payers.[18,19] Pharmacies often prescribe select medications for free or at a low cost.

Insurance Coverage for Psychiatric and Telepsychiatry Services in the US

The American Psychiatric Association (APA) formally endorses the use of telepsychiatry for the following psychiatric services: initial psychiatric assessment, medication management, individual, group, and family therapy; and psychoeducation. The APA bases this support on strong evidence that telepsychiatry results in improved patient outcomes and high client satisfaction surveys.[20] The broad reach of telepsychiatry in the US has enabled care providers to effectively administer evidence-based care to formerly inaccessible populations, including children and adolescents, nursing home populations, college students, veterans, rural residents, immigrants, and incarcerated individuals.[21]

Despite the success of telepsychiatry, state restrictions on Medicaid coverage(government-funded) insurance, by provider-type and credentialing status, and which limit coverage only to patients in approved rural setting sites, have constrained the use of this modality. Even as states gradually lift these restrictions and new laws mandate insurance parity between equivalent in-person and telemedicine visits, administrative approval by government insurance agencies lags.[1] However, the Covid-19 pandemic has serendipitously led to significant relaxing of these legal restrictions, thus facilitating new insurance models for telepsychiatry in the US.

The Affordable Care Act, with its goal of affordable access, allowed many insurance companies to embrace coverage for telemedicine services, even before the pandemic. States are increasingly passing parity laws mandating private insurance companies to provide coverage for telemedicine services.[22] At the time of this writing, many states and

TABLE 2.

Medicare and Medicaid Descriptions

Insurance	Medicare	Medicaid
Governance	Federal health insurance program; strictly governed by federal government	Joint federal and state program; but governed by state governments
Eligibility criteria	(a) 65 years or older; (b) under 65 with certain disabilities; (c) any age and who have End-Stage Renal Disease (ESRD) or Amyotrophic Lateral Sclerosis (ALS)	Individuals and families with limited income and resources
Coverage includes	Inpatient care; skilled nursing facility (Part A); outpatient, and some preventive care (Part B), prescription drugs (Part D)	Inpatient care; skilled nursing facility, outpatient care in federally qualified health center, rural health clinic
Costs	Cost depends on the coverage	Cost depends on the individuals' income and the rules, policies, and procedures in the given state. Each state has their own Medicaid rules

TABLE 3.

Common Types of MCOs

Health Maintenance Organizations (HMOs): A patient chooses an in-network primary care provider, who is responsible for referrals to specialists. The insurance typically pays only in-network providers and is generally the cheapest option.
Preferred Provider Organizations (PPOs): Patients can choose from a list of in-network providers for primary and specialty care. Patients can also see out of network providers but will incur a higher cost than in-network counterparts. Additionally, patients can typically see in-network specialty providers without a referral. Prices tend to be higher due to increased flexibility.
Point of Service (POS) Organizations: Point of service organizations are a cross between HMO and PPOs, which require a PCP but allows patients to see in-network specialists without referrals. The cost is typically between HMO sand PPOs.
Exclusive Provider Organizations (EPO): EPOs allow patients to choose their in-network providers without the need for establishing a primary care provider and receiving referrals. However, all out of network expenses are not covered.

private insurers provide not only parity of Psychiatry services between telepsychiatry and in-person visits but also parity of reimbursement levels within the standards and scope of usual practice. State laws regulating telepsychiatry practice and reimbursement vary widely across the US; hence, Mental Health Professionals desiring to practice telepsychiatry need to acquaint themselves with their states' laws governing insurance reimbursement for services, regulations concerning obtaining consent for treatment by telemedicine, and rules governing practicing across state lines. MCO are increasingly joining hands with companies that provide 24/7 access to care at a low cost by physicians who partner with these entities.[23] In essence, telepsychiatry could be an option to meet the growing demands for urgent psychiatric assessments.

Coverage for psychiatry, addiction, and telepsychiatry services are determined by the individual private insurer or MCO and can vary widely. Prior to scheduling a video/telephone consultation, patients typically check with their individual MCO insurance provider to determine if psychiatry services are approved, if the desired provider is in-network, and whether telepsychiatry services are covered. Some states have mandated that telepsychiatry services are reimbursed.[24]

In view of the many benefits of telehealth, many states in the US are implementing policies promoting the utilization of telemedicine services. The American Telemedicine Association (ATA) has released its 2019 State of the States Report: "Coverage and Reimbursement," which describes policies and telehealth laws, allowable patient settings for telehealth, allowable technologies and insurance provider types, reimbursement and coverage, across all states and District of Columbia (DC) in the US. Most states do not reimburse telehealth e-mails, phone calls, or fax communications.

Important conclusions of ATA report 2019[24] and Center for Connected Health Policy (CCHP) Spring 2020[1]:

1. Since 2017, 40 states and the DC have functional policies on telehealth coverage and reimbursement. All 50 states and DC currently reimburse for some type of live video telehealth services. Reimbursements vary widely from state to state with regards to medical specialties covered.
2. A total of 36 states and DC have parity policies (equivalent coverage of in-person health services reimbursements and telehealth reimbursements) for private payer coverage
3. Medicaid payment parity policies exist in 28 states; 16 of them have mandated payment parity for private payers.
4. The majority of states recognize the benefits of remote patient monitoring (RPM) and store and forward (S&F); 16 state Medicaid programs reimburse for store-and-forward, and 23 states reimburse for remote patient monitoring.
5. The patient's residence is not eligible as the originating (patient-located) site. Nineteen states do allow the personal residence to be an originating site under certain rules.
6. Thirty-nine states and DC have a consent requirement in Medicaid policy, regulation, or the law. This usually includes either a verbal or written acknowledgment by the patient that their care will be provided—by telehealth in place of an in-person visit, an acknowledgment of (remote) risk of penetration of HIPAA protected platforms by hackers or malware, and agreement to participate in the visit in a HIPAA compliant private location.

US: Overcoming Challenges with Insurance Coverage for Telepsychiatry During the COVID-19 Pandemic[25]

Telehealth policies during COVID-19 have been rapidly evolving. In the US, Medicaid providers now have broad

authority to utilize telehealth and telephonic consultations in place of face-to-face requirements. Special telemedicine licensure requirements were waived for all Medicaid providers, even though state-mandated requirements still apply. Policy changes in response to COVID-19 by private insurers (Aetna, Cigna, and Blue Cross Blue Shield) have made telehealth more widely available. Waivers of copays for telepsychiatry services have been offered for a period. The following are the key findings of the changes that the Center for Medicare and Medicaid Services has made to telehealth policies for fee-for-service care since March 2020:

1. There are no geographic restrictions for patients. The patient can participate in the telehealth interaction from their home. Some states make allowances for practitioners to see patients in neighboring or adjoining states. Twenty-nine states have adopted the federation of State Medical Boards Interstate Medical Licensure Compact, which allows for an expedited licensure process to obtain licenses to practice in the other states.
2. The practitioner can provide services when at home and need not put their home address on the insurance claim
3. Apart from live video, audio-only telephone services for behavioral health counseling and educational services are allowable.
4. All practitioners can bill Medicare for professional services provided.
5. The amount of reimbursement will be the same as if provided in-person. Some rates for telephone visits have increased to match in-person care by medical complexity rather than contain artificial ceilings on billing codes.
6. At the beginning of the pandemic, only a few states permitted audiovisual telehealth exams to qualify as originating the patient–provider relationship, which is required to write a prescription for a controlled substance. However, given concerns about the ongoing opioid epidemic, states and DEA laws were relaxed at the beginning of the COVID-19 pandemic, allowing for care provision for medication-assisted treatment (MAT) and the prescribing of other controlled medications following an interactive audiovisual interview.

Conclusion

The silver lining in the COVID-19 pandemic is the rapid expansion of telepsychiatry. But telepsychiatry practice might return to pre-COVID levels once the COVID-19 pandemic abates. Nevertheless, the data drawn from the many positive outcomes and the satisfaction reviews will help in asserting the value of telepsychiatry to key CMS, private insurance, and MCO stakeholders. Telepsychiatry will likely remain a permanent and prevalent practice form for the delivery of psychiatric services in the US.

India has also made strides but still struggles against numerous roadblocks. IRDAI has directed the insurers to allow telemedicine consultation claims. Telepsychiatry comes under the purview of TPG, yet barriers persist at the policy implementation and patient education levels. In the US, numerous changes in the insurance coverage have occurred to accommodate telemedicine during the COVID 19 pandemic. In India, there is a need for government solutions for more fair distribution and better education about benefits. Insurers, both the public sector and private companies, should reimburse more preventative services, which would include claims for both hospitalization and outpatient services, including telepsychiatry costs incurred. Many private companies offer supplemental benefits for outpatient services consultations, but we propose that these should be a mandatory part of all the insurance plans and rather than only available as a paid supplement. Decreasing psychiatric care costs would enable clients to afford preventative outpatient care, reducing noncompliance with medications due to nonaffordability, relapse of psychiatric conditions, hospitalizations, and secondary disability-adjusted life years (DALY) due to psychiatric illnesses. Government health insurance schemes also need to provide coverage for outpatient services so that the economically weaker populations can also get the benefit of telepsychiatry. Outpatient care and telepsychiatry lag behind acute care coverage in both India and the US, yet recent strides provide hope for continued expansion of these important services in both countries.

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The Relevance of Telemedicine in Continuing Medical Education

Samir Kumar Praharaj[1] and Shahul Ameen[2]

ABSTRACT

Continuing medical education (CME) is essential for medical practitioners to update their knowledge and skills periodically to provide clinical care in keeping with the evidence available. Traditional methods of CME such as workshops, conferences, and seminars are helpful to bridge the gaps in practice. With advancing technologies, online format is used to deliver CME with appropriate modifications. Although there are distinct advantages of online CME in regards to wider reach and flexibility, there are certain drawbacks beyond just technological limitations. Interactivity using ingenious ideas may be required to motivate and engage learners during online CME.

Keywords: Continuing medical education (CME), continuing professional development (CPD), online learning, distance education, telemedicine

Medical practitioners are expected to periodically update their knowledge and skills to keep abreast of the developments in their fields of practice. This is also mandated by the regulating bodies such as the Medical Council of India (MCI) and State Medical Councils (SMC).[1–3] A "clinical care gap," which refers to the gap in practice from the available evidence to treat or manage a patient in a cer-

TABLE 1.

Comparison of Traditional vs Online CME

Traditional CME	Online CME
Fixed time and place	Flexible time and place
Pace as per schedule	Self-paced
Less time for reflection	Time for critical reflection
Limited access	Wider reach
More interactive	Relatively less interactive
Costs higher	Cost-effective
Skill learning is possible	Skill learning is difficult
Not dependent on technology	Technology dependent

tain way, is present among the medical practitioners.[4] To reduce this gap, they need to periodically attend continuing medical education (CME) or continuing professional development (CPD) sessions. CME includes "any activity which serves to maintain, develop, or increase the knowledge, skills and professional performance and relationships that a physician uses to provide services for patients, the public, or the profession."[4] In contrast, CPD is a broader concept and includes "educational methods beyond the didactic" and "embodies concepts of self-directed learning and personal development and considers organizational and systemic factors."[4] (In this manuscript, "CME" is used throughout to maintain consistency.) CME programs that focus only on knowledge have limited usefulness; hence, more emphasis is needed on developing the practitioners' skills and performance. The online CME falls under the ambit of "telemedicine" and "telehealth" framework, as defined by World Health Organization[5] and adopted by the recent "Telemedicine Practice Guidelines" by Board of Governors in supersession of the MCI.[6] This review discusses the use of telemedicine in delivering CME and its pros and cons, and provides some recommendations.

Traditional vs Online CME

Table 1 compares traditional and online CME. Traditional CME is carried out in the form of *seminars, workshops, symposiums*, or *conferences*, where the practitioners travel to a distant site to participate and the resource persons meet them face to face to conduct the sessions. Variants of these activities include resource persons traveling to the participants' institutions as *guest speakers*. One important characteristic of most CME programs is the opportunity to *interact* with the presenter, both during and after the sessions.

CME has also been delivered online using telemedicine systems, which allow remote delivery of content without any geographical limitation. One way to expand the reach of traditional CME to remote audiences is the transmission of live activity through satellite or the internet. Depending on the type of delivery, it can be either *synchronous* (i.e., in real-time) or *asynchronous* (i.e., prerecorded content is available to the participants to access at their convenience). *Teleconferencing* is a real-time and live interaction between participants in different locations using *audio* and/or *video*, for the purpose of CME.

Theoretical Frameworks for Online CME

In developing CME activities, including online ones, the adult learning principles should be employed. Knowles described an *adult learner* as someone with self-directedness who requires education to be (a) relevant to their practice, (b) in keeping with their learning style, and (c) in a nonthreatening and supportive manner.[7] Adult learning includes *self-directed learning,* which is characterized by discipline and motivation, critical thinking, ability to reflect and be self-aware, curiosity, openness and flexibility, independence and self-sufficiency, information seeking and retrieval skills, and good general learning skills.[8]

Adult learning involves the principle of *reflective practice*, which includes abilities such as self-appraisal and self-awareness during learning, that is, reflecting on the content and process of learning.[9] Such reflection may result in developing *zones of mastery* around the areas of *competence*, that is, practicing almost at an automatic level. Kolb described a similar internal process of "experiential learning," in which the learner moves, through reflective observation, from concrete experience to a more abstract understanding of a concept.[10]

Also relevant for online CME is *situated learning theory*, which encourages learners to construct meaning together by integrating what is already known and experienced, with the new information gathered in a specific context.[11] In these situated environments, learning results from collaborative engagement within "communities of practice," that is, "groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly."[12] Major components of situated learning include problem-based learning activities to increase learner motivation and engagement, access to expert guidance and feedback, a kind of "scaffolding" that provides a cognitive framework for learning (e.g., providing learning resources, templates, or guides), and opportunities to consider multiple perspectives through interactive discussion and reflection.

Advantages of Online CME

The most important advantage of online CME is the possibility to exchange health information and provide education over a distance, without the need to move the participants, including patients, practitioners, or educators, that is, *distance learning*. In settings that have a solo practitioner or fewer professionals to carry out the work, it may not be feasible for them to travel to a distant site to attend the program. Added to this is the cost of travel and logistics, which can sometimes be prohibitive, especially for international events. The broad *geographical reach* of online CME is a definite advantage for many learners. This is of particular advantage in pandemic situations (e.g., COVID-19 pandemic of 2020), with travel restrictions and safety precautions in place, when only the online mode of CME is possible.

Most online CME programs will be based on self-directed learning principles, which have several advantages. They can be *flexible* and *self-paced*, that is, performed as per the learner's schedule. The learning material can be used at convenient speeds, and revisited and the content revised as necessary. Multiple ex-

posures to the same content are known to enhance learning and retention, but the options for that are limited in traditional CME. The inclusion of *self-assessments* can enhance reflection and the learning experience. For the instructor, the possibility to teach a large group of participants over a wide geographical area is an added benefit. These advantages can be summarized in the phrase "anytime, anyplace."

The use of *video teleconferencing* allows two-way interaction between the participants, with an experience almost like face-to-face meetings. With good quality cameras and other advanced technologies, it is possible to have veridical experience during online CME. A good platform or *application* to run the event enhances user experiences, especially if it has many built-in interactive elements. With the simultaneous use of multiple elements, such as videos, transcripts, discussion boards, and quizzes, different learner needs can be satisfied. It is possible to access the educational content using a wide variety of interfaces, such as personal computers, laptops, tablets, or even smartphones. Also, with wider availability of *broadband network facilities*, Wi-Fi connectivity has resulted in accessing educational content *synchronously* from almost anywhere.

A variety of educational programs can be conducted online. The online equivalent of seminars, called *webinars*, allows the delivery of educational content using the internet, with the possibility of some interaction between the presenter and participants using online interactive tools. They can accommodate more participants than a physical conference room setting that could be limited by space and accessibility. Webinars provide the participants the convenience of attending an academic presentation from the comfort of their offices or homes. This can be particularly useful for very focused topics with very few interested persons around the world, which can lead to the development of *communities of practice*. These groups can adopt online technologies to enhance social ways of learning. For example, the use of chat rooms can enhance interactions that may be personal as well as on work-related topics. As needed, more formal discussions around clinical topics, either synchronous or asynchronous, are possible. Some forms of asynchronous discussion may be preferred by busy clinicians who find it challenging to make arrangements for face-to-face meetings, teleconferences, or online synchronous conferences. Another advantage of online CME is the possibility of inclusion of several experts in a *panel discussion*, which may be, due to logistic reasons, difficult in physical CME.

Disadvantages of Online CME

Many educators believe that self-directed, informal methods of learning are not as effective as traditional CME and that they should not be equated. For most of the traditional programs, especially those organized by medical associations, there is some screening of the speakers by a committee, thus ensuring some quality standards. However, this may be less stringent for online CME and webinars, some of which could be self-styled and self-promoted, as exemplified by the current flurry of webinars with the COVID pandemic. In such situations, it will be incumbent upon the participants to carefully choose which webinar to attend, as against most standard CME programs.

There is some, albeit older, evidence to suggest that many clinicians prefer traditional CME delivery methods over online programs.[13,14] Specifically, online learning may not appeal to those who prefer face-to-face contact with teachers or fellow learners. Also, interactions in a traditional CME go beyond the classroom to other areas, including dining tables, which may foster networking and other collaborations, which is possible only with socialization.

As we understand more about the use of online technologies, it has become apparent that to be effective, just like off-screen education, these activities must be interactive in order to engage the learner and improve their impact. In this context, there is a limitation regarding which interactions can happen during an online CME. The experience of online interaction itself is very different from that of in-person interaction. When the streaming is such that only the slides are visible on the screen (or, even if the presenter too is visible, it is only the person's face, that too in a small rectangle in a corner of the screen), communication through nonverbal means gets hampered and the communication becomes less effective. Interruptions due to technical reasons too can adversely affect the experience of learning—It is not uncommon to see poor video quality and pixelation, voice cracks, freeze, and drops. Similarly, though access to the CME is possible through many types of devices, the experience may be very different with smartphones as compared to large-screen computers. It is also possible that devices that are commonly used for the purpose of fun and entertainment, when used for a serious academic purpose, may not elicit the same level of engagement from all learners.

As the online CMEs are dependent on technology, which is not uniform across the country, their accessibility may be limited in areas with poor internet connectivity and low bandwidth. Also, accessing the CME content from home or other places with multiple other distractions may be very different from the experience of sitting in a hall dedicated to the CME program, where one can focus more on the task at hand. Furthermore, during online CME, participants may get involved in other work whilst "watching online content," which may reduce their concentration and complete participation.

Efficacy of Online CME

The efficacy of telemedicine for improving clinical outcomes has been established. However, the efficacy of online CME using telemedicine is less researched. Kirkpatrick and Kirkpatrick have described assessment at four levels to evaluate the effectiveness of learning[15]:

1. *Reaction*, which is studied by feedback from the participants and includes initial comments, overall experience, satisfaction levels, etc.
2. *Learning*, which involves knowledge and skills gained, examined as pre- and post-tests.
3. *Transfer*, which involves changes in behavior after the training program and is evaluated 3–6 months following the program.
4. *Results*, which include changes in patient outcomes as a result of changes in practice.

Several studies have reported a positive experience and increase in physician knowledge following online CME (Kirkpatrick levels 1 and 2), but few studies have examined their effects on practice behavior and patient outcomes (Kirkpatrick levels 3 and 4).[16–18]

There is very weak evidence that online CME is actually superior to traditional CME.[19–23] Cook et al., in their systematic review, suggested that elements such *interactivity, practice exercises, repetition,* and *feedback* are associated with improved learning outcomes in online formats, whereas the evidence for other variations in online instructional formats (e.g., the spacing of material, blended learning, use of animations) was inconclusive.[24]

A pragmatic effectiveness trial may be challenging to carry out, as the major difference between traditional and online CME involves geographic accessibility. Also, several e-learning modules and CMEs are created by a wide range of public and private organizations, and there is no pedagogical standard to examine the quality of these courses. At most, the content and course development have been examined as some of these require accreditation and certification.

Quality of Online CME

Many times, the online CME often consists of "re-purposed" live, formal activities. As we start to understand the nuances of the use of rapidly developing technologies, it is becoming more apparent that principles of online learning could be very different from those of learning in traditional CME. The elements should, instead, evolve over time to increase the quality of learning experiences. Establishing a "set of standards," in the form of quality criteria, will help optimize online learning.

Rather than merely repurposing content that was intended for a live audience, it is preferred that online education be designed appropriately for the medium. Talking heads or dense pages of text will not keep the learners engaged. Developing for smaller formats such as hand-held devices requires even more sensitivity to sizing and length of content.

Based on a consensus, the following quality criteria have been proposed for developing online CME modules; they should (a) be needs-based, (b) be presented in a clinical format (using case vignettes), (c) use evidence-based information, (d) permit interaction with content and experts, (e) facilitate and attempt to document practice change, (f) be accessible for later review, and (g) include a robust course evaluation.[25]

Future of Online CME

Regardless of content, these technology-based activities allow for new approaches to CME. For example, online communities of learners can be formed to allow for follow-up reminders, reporting of practice changes, as well as networking and consulting among peers. These groups can assist in evaluating the effectiveness of the education as well as determining the needs for new activities. However, these online CME need to be accredited by MCI or SMC.

Planning an Online CME

All CME should be learner-centered, relevant to learners' needs, able to engage learners actively, and able to bring about behavioral changes.[26] Hence, multiple teaching strategies, rather than only a single lecture or simple online text, are essential for changing the practice behavior of clinicians.[27] Certain design elements and strategies are common to both traditional and online CME, such as need assessment, educational objectives, identification of learning outcomes, building on prior knowledge, learner engagement and interactions, feedback and guidance on learning, and authentic assessment methods that contribute to learning. The following are essential elements while planning online CME.

Needs Assessment

All CME, including online ones, should cater to the needs of learners. The clinical care gaps should be established and the educational objectives determined based on these needs. This can be accomplished by using surveys or interviews or even from studies on patient outcomes.

Educational Objectives

In the recent decades, there has been a change in the focus of learning objectives. The desired outcomes have changed from simple acquisition of knowledge to more complex outcomes involving skills, changes in practice, and patient outcomes. All CME, including online ones, should focus on these higher-order learning outcomes.

Educational Content

The actual content of the CME should be given to "content-experts" who have requisite knowledge, skills, and expertise in teaching and have demonstrated credibility in the field. They should have the ability to deliver the content, synthesizing the available evidence without any bias and in a manner that effectuates behavioral changes in the learner.

Format

CME may be likened to a teaching intervention that can be strategically planned to improve learner outcomes. The PRECEDE model is a structural framework for a behavior change intervention.[28] It suggests that while planning a CME, one should consider the predisposing elements (characteristics of the participants, such as knowledge, beliefs, values, and attitudes), enabling elements (social and environmental factors such as access, resources, and skills), and reinforcing elements (positive or negative feedback from others).

Interactivity

Effectiveness of learning is improved by increased interaction between the expert and the participants and among the participants themselves. Use of case-based discussion, multiple strategies to promote interactions, and appropriate use of formative assessments are required to ensure enough interaction.

Strategies

A back-up plan should always be ready because issues, such as technical problems with the devices, speaker backing out, may arise. As the target participants are busy clinicians, online CME should stick to time. Some of the time spent for interactions between the participants, speakers, and the technology can be perceived as a waste of time by certain participants, leading to frustration and reduced motivation in them.[29]

Orientation

A period for online orientation, prior to the actual program, may help the speakers and the participants to learn how to access the site, get familiar with the app, install browser plug-ins, learn how to download and upload files, and in general, become used to the technologies. This time can also be used to introduce the speakers and the participants, instill in them a sense of community, and enhance the opportunities for interactions.

Tools

The choice of learning resources and tools should be based on the appropriateness to that particular learning activity rather than going by the latest fad or trend, which may hamper learning. It should not be based on assumptions about the age, skills, knowledge, or preference of prospective participants.

E-Moderating

Although moderating an online discussion is similar to moderating a face-to-face discussion, there are substantial differences. Salmon has described the five-step approach for e-moderating. (a) *Access and motivation*: Participants are welcomed and made familiar with the e-learning material. They may need help with technical aspects during this step. (b) *Online socialization:* Participants begin interaction online, which leads to the formation of a group identity. The role of the moderator is to ensure participation of all, that is, encouraging the lurkers to engage actively. (c) *Information exchange:* Participants are actively involved with course content and online activities. Moderators provide encouragement and guidance in participation. (d) *Knowledge construction:* Participants discuss the content and come up with new knowledge. The moderator facilitates discussions, summarizing the progress. (e) *Development:* At this stage, participants take active responsibility for learning online, and the role of the moderator is more supportive and may be to respond occasionally.[30]

Research on Online CME

Educational research is limited in the Indian setting, and effectiveness of CME, including online CME, has not been evaluated. Most published research is limited to feedback from participants or a pre- and post-test to examine the changes in knowledge. More research is needed to study higher-order changes, that is, behavioral changes in practices and patient outcomes (Kirkpatrick levels 3 and 4), to demonstrate the effectiveness of online programs. This is relevant in the context of a pandemic of webinars in the background of the current COVID-19 situation, which has curtailed all face-to-face CME activities. Standards need to be formulated, based on established quality criteria, to evaluate the online CME.

Recommendations for Regulating Online CME

In India, CMEs are regulated by MCI and SMCs, which mandate at least 30 accredited CME credit hours every five years for renewal of registration.[13] The quality of CME is monitored by the accrediting bodies, based on the organizing body, speakers, topic, duration, and feedback from participants.[13] The CME credit hours vary from 2–4 for a full day event, for which prior approval is necessary.[3] Online CME should be included by MCI and SMC at par with traditional ones, and accredited based on the consensus quality criteria[25] listed above. More elaborate criteria to evaluate the quality of CME is given by the Accreditation Council for Continuing Medical Education.[31]

Conclusion

Clinicians are encouraged to regularly update their knowledge and skills and maintain the standards of clinical excellence required for the optimal care of patients through CME that is aimed at improving performance and optimizing the outcomes of practice. Rapidly evolving technologies have made it possible to develop and implement high-quality online CME courses that can meet the diverse needs of practitioners with convenient and flexible access. However, there is limited evidence to conclude that online delivery is superior to traditional CME. Also, interactive elements are essential to increase motivation and engage learners online, maybe, more so than in conventional settings.

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Patient's Perspectives of Telepsychiatry: The Past, Present and Future

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ABSTRACT

Access to mental health care has significant disparities due to treatment gap, more so particularly for the remotely residing, physically vulnerable, aging populations. Adoption of technology will enable more people to receive specialty care addressing distance, transportation and cost-related barriers to treatment engagement from the comfort of home. Telemedicine has been regarded as

"electronic personal protective equipment" by reducing the number of physical contacts and risk contamination for patients during COVID-19 crisis. This review aimed to give a broad view of patients' perception of the use of telepsychiatry in terms of clinical outcome, cost-effectiveness, and solutions to address patients' challenges with the adoption of technology. Over the years, telepsychiatry, both in synchronous and asynchronous modalities, had shown to improve patients' adherence to treatment, follow-up rates, and clinical symptoms, overcome stigma and discrimination, and save cost expenses accessing health care with better satisfaction and usability outcomes. Its utility is widespread such as in delivering care emergency evaluation, crisis intervention, conducting neuropsychological assessments, psychotherapy, promoting lifestyle modification, enhancing self-efficacy, and overcoming patients' linguistic and cultural barriers to care. However, patients' privacy and confidentiality and psychiatrists' legal liability remain as matter of major concern in digital platform. To keep up with the pace of technology and patients' expectations, a more agile approach is essential to develop, improve, and evaluate telepsychiatric interventions.

Keywords: Access to mental health care, cyberpsychiatry, patient's perspective, telemedicine, telepsychiatry, user's perspective

Psychiatric illness is the second leading cause of disease burden in the recent *Global Burden of Diseases, Injuries, and Risk Factors Study*,[1] and it is estimated to affect about one in every seven individuals. Similar to other health sectors, mental health had progressed to secondary prevention with the implementation of strategies of early evaluation, diagnosis, and intervention of mental illness with the aim for universal coverage as stated by the World Health Organization.[2]

About 83% of patients do not receive basic evaluation and treatment for any mental disorder in India. Possible reasons speculated were inadequately trained primary health care professionals are reluctant or unable to detect, diagnose, or manage common mental disorders.[3] Telepsychiatry serves to bridge the gap.[4,5]

This article intends to give a telescopic view of the long, vexatious dormant period in the evolution of telepsychiatry in the delivery of clinical services, contributed mainly by the service provider's skepticism about its potential benefits. Lack of professional standards and no investigation of specific telepsychiatry applications have also led to its retarded growth.[6] Both psychiatrists and patients doubted the ability of telepsychiatry service to provide satisfactory and cost-effective treatment. Hence many studies were conducted in the last two decades to look at the outcome of the telepsychiatric intervention. However, only a few have looked into the end-users' perspective. It was found that patients' acceptance levels, satisfaction levels, and feedback on telepsychiatric services influenced how clinicians' viewed the use of telepsychiatry.[7] Understanding the patient's perspective of telepsychiatric services will help psychiatrists and health care systems to better tailor their approaches in catering to the patient's felt needs. This article discusses aspects of patient care such as acceptability, satisfaction, cost expenditure, travel time, treatment adherence, stigma, linguistic and cultural barriers, use in special population and crisis, smartphone applications, and patient's rights while providing telepsychiatric services.

Dawn of Telepsychiatry

The techniques of telepsychiatry as a means for health care delivery for the underserved came a long way. It evolved from a simple two-way telephonic service in the late 20th century to the synchronous real-time assessment of patients through a live video feed.[8–13]

Models of contemporary telepsychiatry services are integrated care (collaborative care model) and transition consultation clinic models.

The collaborative care model includes the provision of specialist psychiatric services from urban health centers by engaging primary care physicians in the evaluation and treatment of patients in the remote locale using a digital platform. Most studies[7,8,11,14–16] showed that this model is cost-effective. The conventional integrated care models have often suffered insufficient funding, lack of continued support from psychiatrists, limited coverage of mental disorders during the training, and monitoring.[17] Some apps can be of some help in this model.[18]

In transition telepsychiatry clinics,[19] the psychiatrist provides in-person consultation during the first contact, to arrive at a diagnosis, initiate treatment, educate the patient about the illness as well as the operation of telepsychiatry application. Subsequent follow-ups are held over VC-based teleconsultation to review and optimize the treatment at regular intervals.

Dimensions of Telepsychiatric Care

Acceptability and Satisfaction

In a study by Das et al.,[19] about 96% of patients accepted telepsychiatry in a follow-up session. More than 90% of patients find telepsychiatry as either "very much" or "highly acceptable" over in-person follow-up consultation. The acceptability was mediated by many factors such as respect for privacy, acceptability of telepsychiatrists' demeanor, and easy access to mental health care.

Treatment Adherence

Adherence to medical treatment in chronic diseases is quite challenging. Reasons for nonadherence to medications are hospitalization stigma, the anxiety of long-term treatment, the mechanical complexity of treatment, cognitive challenges, forgetting medication, and intentional skipping of doses. Several studies[20–25] on the use of smartphone-based applications in chronic noncommunicable conditions such as cardiovascular disease even in pediatric age groups, diabetes, chronic pulmonary diseases, hemophilia, and psychiatric disorders had shown increased adherence to medication and better clinical outcome such as reductions in symptom severity, normal blood test parameters, emergency room visits, and hospitalizations.

Cost-Effectiveness

The cost for any intervention comprises of direct medical costs, direct nonmedi-

cal costs, and indirect nonmedical costs. Direct medical costs stem from the utilization of health care services. Direct nonmedical costs include patients' travel expenses to receive professional help, loss of leisure time, and caregivers' use of time. Indirect nonmedical costs can be estimated from productivity losses in gainful employment, such as the number of days absent from work (absenteeism) and the number of days spent at work with reduced efficiency (presenteeism). While the response to treatment provides the clinical perspective, indirect medical costs give a societal perspective in economic analysis. Trimbos and Institute of Medical Technology Assessment Questionnaire for Costs associated with psychiatric illness (TIC-P) is a standardized questionnaire[26] that incorporates all the three components of costs necessary for a comprehensive, cost-effective analysis. This questionnaire has been put to use in a study looking at the cost-effectiveness of an internet-based teleconsultation for patients with eating disorders.[27] Each patient via teleconsultation[28] saved an average of 5 hour travel time and a 325-mile round trip spent to reach the tertiary care clinic for neurological treatment. Economic evaluations performed have shown that guided online self-help[29] and therapist-delivered online cognitive-behavioral therapy[30] for depression have a high probability of being cost-effective compared to care-as-usual.

Telepsychiatry was found to be an economically sustainable model to provide mental health care in our Indian setting. A study[16] reported that the cost expenses in delivering telepsychiatry are nearly 50 and 4 times more economically beneficial in comparison with a tertiary care center and community outreach services, respectively. Both patient and care providers perceived the service to be effective in reducing consult time, better frequency of consult, better monitoring of both clinical symptoms and drug titration, and to some extent, access to psychological techniques.

Impact on Stigma and Discrimination

Smartphone-based applications have helped to reduce internalized stigma and thus enhance follow-up and adherence to antiretroviral therapy in persons living with HIV infection.[31–33] These apps provided educational information and assistance in managing symptoms, reminders for medication schedule, promoted physical activity, healthy foods, and stress management.

Linguistic and Cultural Barriers to Care

Due to a shortage of interpreter availability, the aging population belonging to culturally and linguistically diverse communities receives delayed evaluation and management of dementia. The use of interpreters via telemedicine had overcome these barriers to care and was comparably feasible and acceptable to that of in-person interpretation.[34] When the psychiatrist and patient do not speak in a common language or dialect or have cultural differences, it can hamper their interaction, causing a gap in communication of the clinical management. In such a scenario, albeit interpreters are of great help, they skip communicating the nuances of patients' intimate, sensitive details to psychiatrists. This phenomenon is termed as "lost in translation" syndrome. Also, the presence of an interpreter (third party) in the psychiatrist–patient dyad can impact their therapeutic alliance. Patients wished to use teleconsultation with their native language speaking, remotely situated psychiatrist, rather than through an interpreter.[35]

Special Population

Children and adolescents were found to regard technology-assisted psychiatric intervention as novel and intriguing. Also, they were more proactive in learning and appreciated that they had a sense of control over the situation by mastering the cues to address technical problems quickly.[36] Parents perceived that behavioral intervention strategies were concrete as it saved them from availing leave for the otherwise in-person psychiatric consultation.

There is a shortage of evidence regarding the effects of tele-intervention on cognitive, behavioral, and emotional outcomes among perinatal women. However, a meta-analysis[37] comprising 852 perinatal diabetic women from six countries shows that Internet-based self-monitoring interventions (for glycemic control, medication adherence, physical activity, and diet control) can decrease the level of glycated hemoglobin A1c and decrease cesarean deliveries. An ongoing Digital Cognitive Multi-domain Alzheimer's Risk Velocity (DC-MARVEL) trial is a remotely delivered multi-domain lifestyle intervention aimed to enhance cognitive function and mental health of older adults with subjective cognitive decline. Its pilot study had recruited, screened, and assessed entirely using teleconsultation,[38] and at the end of the 1-year intervention, patients showed improvement in cognition and depressive symptoms. Many participants also expressed that they felt engaged and satisfied with interventions. Technology-based stress management interventions[39] had shown positive effects on self-efficacy in care-giving skills in family carers of people with dementia in rural settings.

When neuropsychological tests were done using videoconference over a high-speed network connection, adults aged 65–75 years showed no difference with the in-person assessment.[40] This encouraging result calls for further exploration of neuropsychological testing of older adults by using digital platforms.

Telecrisis Intervention

Crisis intervention is the management of emotional distress that emerged in the contexts of disaster, trauma, and suicidal risk. The Internet could be used to help people going through severe emotional distress in providing intensive and legitimate support. People going through crises often do not seek help because of the fear, shame, and stigma associated with the subject. The anonymity of an online environment and accessibility at any time of day may enable them to opt internet-based support over face-to-face support, and some app could detect the imminent risk of suicide.[41] No smartphone app was found to provide comprehensive, evidence-informed crisis support,[42] and it is worth researching, given the widespread use of smartphones in this era.

Telemental Health Apps

Telemental health self-help services can be of help for subsyndromal or mildly ill psychiatric conditions as these may not require consultation with professionals.[43] With the assistance of information technology, mental health professionals have designed a computerized, internet-based "self-help" software for self-monitoring, self-evaluation, self-intervention for anxiety, depression, adjustment problems, etc. Urban, employed individuals found these digital-health apps more comfortable and reported that their health literacy and confidence improved on continued use.[44] Also, they perceived traveling down for an in-person consultation or holding a fixed appointment over VC with mental health partners as time-intensive, often incurring hindrance to their busy work schedule and multitasking leading to drop-out. For these users, self-help applications come across as a viable option for their sustained engagement in mental health care. However, they need periodical redesigning of their services customizing to users' contexts and requirements.

Rights of Patients

Teleconsultation must not only serve for equality of access to high-quality mental health care from psychiatrists but also give a sense of empowerment amongst technologically challenged users. Patients have the right to seek a second opinion, to avail authentic information on mental health illness, to have access to their virtual medical records, and to be part of a health care system where their feedback is well taken for the improvisation of existing mechanisms.[45] Patient confidentiality in the telemedicine context is a matter of concern for both patients and psychiatrists.

In the latest Indian telepsychiatry operational guidelines (TPOG-2020),[46] two kinds of informed consent, implied and explicit, are discussed and addressed.

Patients' Perception of Limitations in Telepsychiatry

Age

Digital immigrants and digital natives are born before and after the early 1990s, respectively. The former grow up having technology as part and parcel of their livelihood. Thus, age still remains as a non-modifiable challenge in the acceptance of telepsychiatry by patients.[47]

System Transference

It is analogous to transference in psychotherapy, where patients have a pattern of feelings, attitude, and past experiences towards telepsychiatry operational systems.[48] It can be either positive or negative. Patients with positive system transference welcome and advocate telepsychiatry. In the case of a patient with negative system transference, it is advised to be honest in accepting the shortcomings of the system, empathizing with their difficulties without affecting the therapeutic relationship. It is vital to address their difficulties or teleconsultation may be withheld and in-person consultation continued till the time the patient is comfortable with the operational systems.

Interference Due to Psychopathology and Personality Traits

Patients' symptoms and personality traits can interfere with the telepsychiatry process. For example, a patient with active psychotic complaints can incorporate the VC monitor into his delusional thinking and terminate further teleconsultation.[49] On the other hand, another patient with socially shy, body-image concerns reported more comfort in teleconsultation, citing that her psychiatrist cannot view her body due to limited coverage by the camera in VC.

Nonavailability of Psychotropic Medications

Although consultation with psychiatrists can be attained via telepsychiatry, psychotropic medications are rarely supplied in rural pharmacies.[50]

Strategies to Improve Teleservice: Learnings from the Patients' Perspective

Digital Flexibility and Training

In a panel discussion with lay representatives conducted in the UK,[51] the citizens opted for patient-centered design and continuous evaluation and feedback over more research. Also, the following principles were suggested for the development of teleconsultations:

- To serve based on the respect and dignity of the individual.
- End-users (patients, caregivers, and health professionals) should be involved in designing new technologies.
- To promote design in the context of the use.
- Holding an induction session prior to the actual scheduled session to train the patient in the technical system's operation and the additional communication skills required when interacting with patients via these new media. This step will reduce the apprehension and build confidence in patients and their caregivers in carrying out VC.

Virtual Physical Examination

Virtual physical examination has less regard in telepsychiatry as the diagnosis is largely interview based. Hence, telepsychiatry was believed to be more feasible, as opposed to other disciplines of medicine.[52] Physical examination is crucial to rule out organicity and examine drug-related adverse effects and comorbid medical symptoms. Some components of physical examination can be directly observed via video, like examining gait disturbances by asking the patient to walk. In contrast, some others may require proxy indicators of conventional clinical findings like blowing a balloon to examine functional lung status. Yet others like higher mental function can be assessed with the help of family members—for example, the level of orientation, smell for alcoholic or ketotic breath in altered sensorial states. However, critical and emergency conditions mandate the performance of physical examination by local physicians and psychiatrists.

Delivery of Medication

Psychiatrists and officers-in-charge of district mental health programmes[53] and district hospitals must ensure to stock all primary care centers under them with essential psychiatric medications.

Conclusion

Telepsychiatry is perceived to be acceptable, satisfactory, and economically serviceable by patients, particularly belonging to underserved communities. Synchronous mode of service must be preferred as it is of paramount importance to perpetuate the doctor–patient relational interaction that fortifies diagnosis and treatment. A "one-size-fits-all" approach will not suit the needs of all patients when culture and contexts are considered. Hence, it is crucial to take up an iterative approach incorporating patient's subjective experiences and refining the teleservices periodically catering to their specific needs. In the wake of the COVID-19 pandemic, access to mental health care was affected by many barriers, such as patients' fears of acquiring infection from hospitals. Reassuringly, telepsychiatry has swiftly become a substitute to traditional in-person psychiatry, similar to the other fields of medicine. The rapid adoption of telepsychiatry must not compromise on the quality of the care, comfort, and safety offered to patients. Telepsychiatry is not a panacea to the issues of accessibility and equity in our health care system. Everyone deserves access to psychiatrists who can physically examine and treat patients. However, it can be considered an add-on to the existing armamentarium, a credible one at that.

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Hybrid Telepsychiatry: A United States Perspective with Relevance to India

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ABSTRACT

Telepsychiatry provides a platform for mental health care delivery in rural and remote areas. Hybrid Telepsychiatry model combines home-based telepsychiatry with domiciliary visits by community mental health workers. This involves use of different modes of teledevices which ensures safe and secure clinical platform. Research evidence supports that incorporating this model seems to use the specialist time efficiently where the resources are limited and services need to be catered for larger geographical community. The current telepsychiatry practice in the United States, specifically the hybrid model, has indisputably shown significant benefits in caring for psychiatric patients. Such valuable clinical model and its relevance to current mental practice and also its application in the Indian scenario can be helpful in providing comprehensive multidisciplinary treatment. This review evaluates and highlights the potential risks and benefits of adopting the hybrid telepsychiatry model in the Indian mental health system.

Keywords: Domiciliary visit, telepsychiatry, telemedicine, hybrid telepsychiatry, mental health services

Telepsychiatry can provide a platform for mental health care delivery in rural and remote areas by linking clients to psychiatrists located at a different location and also connecting primary care practitioners in rural areas to networks of mental health specialists throughout the country. Telepsychiatry is in practice for several decades in the United States (USA) and has been successfully adopted to care for people with mental health needs. Telepsychiatry promotes and enhances access to psychiatric care for patients and it has evidently demonstrated positive clinical outcomes. In India, there is dire need for mental health professionals not only in rural but also in urban areas. Hence, incorporating telepsychiatry model of practice tailored to the needs of the Indian mental health system will enhance quality of care and reduce the mental health treatment gap.[1] The aim of this review is to increase the understanding of the current telepsychiatry practice in the USA, specifically the hybrid model combining home-based telepsychiatry with domiciliary visits by community mental health workers, and discuss its relevance and application in the Indian setting with the goal of providing comprehensive multidisciplinary treatment.

Telepsychiatry

The American Psychiatric Association (APA) Telepsychiatry Task Force stated in February 2018:

"Telemedicine in psychiatry, using video conferencing, is a validated and effective practice of medicine that increases access to care. The APA supports the use of telemedicine as a legitimate component of a mental health delivery system to the extent that its use is for the benefit of the patient, protects patient autonomy, confidentiality, and privacy; and when used consistent with APA policies on medical ethics and applicable governing law."

Telepsychiatry involves providing variety of clinical services, including psychiatric assessments, psychological therapies, psycho-education, and pharmacological management. The APA has developed a tool kit for the use of psychiatrists and other providers.[2]

The basic technologies used in telepsychiatry are as follows:

1. Live videoconferencing
2. Save/store and forward: The save/store and forward technique can be utilized in non-emergent cases or cases well known to the psychiatrist.
3. Remote patient monitoring (RPM): Remote monitoring might be helpful for medication monitoring and to obtain basic information such as vitals, weight, and height and blood glucose level.
4. Email/phone/fax which can be:
   a. Synchronous (provides live, two-way interactive transmission between patient and provider at distant locations) or
   b. Asynchronous (involves acquiring medical data and then transmitting this clinical information for later being reviewed by a specialist).[3]

Telepsychiatry explicitly refers to remote clinical mental health services, while "telehealth" denotes broader scope of health care services in remote setting including nonclinical services, such as continuing medical education, administrative meetings, and provider training.[4] In essence, telepsychiatry and telehealth use fall into four broad categories: educational, research, administrative, and clinical. There are several models of telepsychiatry some of which are elaborated further.

Telepsychiatry Integrated Care Models for Rural Community[5]

Telepsychiatric integrated care delivers both physical and mental health services, to be provided under one umbrella or platform with close communications amongst providers with primary care physicians playing a greater role in managing mental health disorders. This helps to address the shortage of mental health professionals, improves access, and moves the needle toward more equitable distribution of mental health services delivery. The important modes of service delivery under this broad model are:

1. **The telepsychiatry collaborative care model:** In the model of collaborative care in telepsychiatry, an offsite mental health provider collaborates with primary care providers and others to manage patients in remote rural or underserved community areas. The three randomized controlled trials (two studies on depression and one study in PTSD)[6,7,8] to assess the telepsychiatry collaborative care model which cumulatively enrolled over a thousand patients all showed that this approach is clinically effective. This model can be extended to home-based mental health care provision as in hybrid telepsychiatry (discussed further).
2. **The telepsychiatry behavioral health consultant model and the telepsychiatry consultation–liaison model:** The behavioral health consultation model could be modified to use in small rural primary care clinics which are deficient in onsite mental health specialists by employing offsite telepsychiatrists and teletherapists who provide service using interactive video. The behavioral health specialist performs a conventional initial diagnostic assessment using video or phone services. The consultation can be done asynchronously using store and forward technologies. Following the consultation, the telepsychiatrist develops a treatment plan for the primary care team to implement.
3. **The telepsychiatry curbside consultation model:** In this model, primary care clinician are categorized into "learning network" which is specific to a disease and they meet at a regular interval via video teleconference. The primary care physicians through teleconference, discuss the patient management difficulties with a specialist physician based in an Academic Health Training Institute and prepare a treatment plan.

Hybrid Telepsychiatry

Hybrid telepsychiatry is an amalgamation of in-person psychiatry services and telepsychiatry services. It is a team-based practice in which a social worker or mental health professional goes to the patient's home with an electronic device to connect the patient with an offsite telepsychiatrist. Hybrid model involves assimilating telepsychiatry consultation into traditional in-person care systems. This model is employed not only in rural areas but also in many other settings such as underserved areas within a city, nursing homes for the elderly, group homes for adults, multiplex and individual houses where the residents find it difficult to travel due to transportation, cost or physical and cognitive limitations.[9] The hybrid telepsychiatry approach seems to be more efficient and clinically effective than outpatient visits as it can improve timeliness of care and frequency of visits based on the clinical need. The hybrid telepsychiatry may help improve the accessibility of psychiatric services between urban and rural areas, especially following discharge from an inpatient psychiatric unit or from an emergency department visit.[10] Though, live videoconferencing is a commonly used technological modalities in telehealth services, other modalities such as store-and-forward clinical information, RPM, email/phone/fax can also be used in hybrid telepsychiatry.

The evidence for the benefits of "hybrid" care in services in remote and rural areas is still emerging. However, evidence supports that hybrid care model undoubtedly reinforces the patient's willingness to participate in the outpatient clinical services and engage with their clinical team. It can also help in improving medication adherence in severe mental illness. Also, hybrid psychiatric care had enhanced overall service delivery and helped improve outpatient follow-ups with the specialists compared with patients who had only the outpatient clinical services.[10] Literature review reveals that patients living in urban area have better follow-up than patients in rural area.[11] This disparity exists both in India and the USA. This lack of equitable distribution between rural and urban health care can be remedied by using telepsychiatry as important fragment of hybrid care service model to make sure that the mental health services are available to people living outside the urban areas.[12,13]

Functions of Hybrid Telepsychiatry

In telepsychiatry, there are low-, moderate-, and high-intensity care levels. For example, a text message or email reminder would be considered low intensity, a brief follow-up conversation by phone is moderate intensity and a full video session is high intensity. The hybrid model, like other telepsychiatry models allows for all levels of intensities but adds the in-person visit by a mental health worker. The in-person visit is valuable in helping with device and technology, reminders, reinforcement, and compliance, and adds the value of personal rapport as well. The various functions are listed in **Table 1**.

Risk and Benefits of Home Visit by a Mental Health Worker in Hybrid Telepsychiatry

Advantages

1. No travel time for patient or psychiatrist resulting in cost savings.
2. Collaborative approach involving multidisciplinary team members is unaffected.
3. Improved access, especially to those who are homebound.
4. Better coordination with other service providers such as those engaged in social service.
5. lf the mental health provider is a nurse, she can perform brief physical examination, monitor metabolic profile, get vitals, check weight, and do a brief examination for side effects such as EPS and blood glucose level.[9]
6. Helps reduce the risk of violence, aggression, and abuse.
7. Observing children and families in their own environment such as home will give better understanding of naturalistic behaviors which perhaps can be masked when the patients or family visits to the clinic due to the "white coat syndrome" that is commonly seen when patients come to clinics on their best behavior, minimizing their symptoms.[12]

Disadvantages

1. There might be issues with confidentiality if the therapist or nurse arrives in a vehicle that has the company logo or other signage. Neighbors may come to know that there is a person with mental illness in the house

which could increase stigma in the community.

2. Another limitation of current telepsychiatry in the USA is that there are limitations on out-of-state practice, since each state has a separate licensing system. Any practice even if inadvertent could lead to allegations of malpractice, litigation, adverse actions by the licensing board, etc. If physicians provided therapy services through telemedicine to patients living in a residential area of a particular state where the physician actually did not have license to practice, then the indemnity insurance company may not be obligated to pay a judgment or even to reimburse associated legal fees if the patient initiates a lawsuit.[14]
3. There is risk of unpredictable behavior, safety issues, and risk of violence.
4. Many insurance providers may not provide cover for telepsychiatry.

Telepsychiatry in the USA

In 1959, the Psychiatry Institute of the University of Nebraska utilized videoconferencing for education, research, consultation, and treatment for psychiatric disorders.[2] In 1969, Massachusetts General Hospital utilized video methods for providing consultations at an outpatient clinic located in Logan International Airport in Boston. In the 1970s and 1980s, telepsychiatry services gradually expanded to various locations such as schools and courts in the communities surrounding academic medical centers. There were multiple small pilot projects implemented but they did not always sustain due to limited financial resources and technological limitations. Telepsychiatry rose in popularity in the early 1990s due to lowered costs due to developments in technology along with its impactful utilization in prisons, universities, and federal health systems.[13,15] Between 2014 and 2019, telehealth services in the USA grew by ~35%. In a survey of 5,375 Emergency departments and 4,537 responders, 20% reported utilizing telepsychiatry services.[16] All states in the USA are using telepsychiatry, although there is much variation in the extent and scope of these services with some states being more advanced than others. In one of the more advanced states is South Carolina, the South Carolina Department of Mental Health and the South Carolina Hospital Association partnered with Duke University and have launched an extensive statewide telepsychiatry network, the first in the USA.[17] The COVID-19 pandemic has fueled the use of telepsychiatry and, overnight, telepsychiatry has become the preferred mode of providing psychiatric care. This is expected to largely remain and grow further even after the pandemic is controlled.

Assertive Community Treatment and Telepsychiatry

In the USA, intensive community psychiatric care for patients with severe mental illness (does not include common mental disorders that are mild or moderate in severity) is provided by assertive community treatment (ACT). This model of services not only supports the clinical symptoms and medication management but also deals with issues related to accommodation, finances, and other important needs to help person to integrate into the community. They also assist with activities of daily living, shopping, and managing public transportation. Its benefits have good evidence especially in urban settings.[18] Nevertheless, use of Telepsychiatry in the ACT model of working is still in its incipient stage. A project in Delaware added telepsychiatry to an existing ACT program for regular clinic visits and then expanded to include use of home telepsychiatry visits for ACT patients. Similar project was initiated in El Paso, Texas. However, the outcome of the performance of these projects is not yet available.[19]

Telepsychiatry During COVID Pandemic

Prior to the COVID pandemic, patients' homes were not considered as clinical service sites, and Medicare (health insurance for adults aged 65 or older, or disabled adults) would not reimburse for telemedicine services originating from homes.[9] However, during COVID pandemic crisis, to increase access to physicians in rural areas, the US government passed a law to permit telemedicine to be reimbursed by Medicare if the patient is in a clinical facility located in a county outside of a metropolitan area. A trained nurse, if she suspects psychiatric patient having COVID-19 symptoms at home, can collect saliva sample.[20]

Telepsychiatry in India

The first telemedicine unit in India was launched in March 2000, in a remote village called Aragonda in Andhra Pradesh. Four years later in December, 2004, the Schizophrenia Research Foundation (SCARF) holds the distinction of pioneering the first use of telepsychiatry by rendering telepsychiatry services to victims of tsunami in the coastal districts of Tamil Nadu.[3] Their services included the staff visits by mobile bus conducting clinics connecting to the main site in Chennai, where specialists are based. They have been actively providing services. In May 2020, the National Institute of Mental Health and Neurosciences (NIMHANS),

TABLE 1.

Roles and Functions of Hybrid Telepsychiatry

Assessment	Clinic interview, diagnostic assessments, mental state examination, cognitive evaluation
Treatment	Medication prescription, providing therapy individual, CBT, interpersonal
Medication management	Checking compliance, titrating medication, monitoring drug level, monitoring the side effects
Continuing care	Regular follow-up, physical examination, monitoring for metabolic syndrome, checks vitals and weight, routine blood test, COVID testing using collection of saliva
Education	Psycho education, relapse prevention
Collaboration	Interactive video for consultation liaison work with other specialist and team members

CBT: cognitive behavioral therapy.

Indian Psychiatric Society and the Telemedicine Society of India, with collaborative efforts, formally drafted the operational guidelines for the telepsychiatry practice in India to provide guidance to psychiatrists in the setting up, implementation, administration, and provision of telepsychiatry services. This guidelines focus mainly on interactive videoconferencing-based psychiatry services.[21]

Hybrid Psychiatry in India

The Mental Health Action Trust (MHAT) has been providing community-based, free, comprehensive mental health services across 8 districts of Kerala through more than 50 centers over the last decade.[22] It has pioneered a model of decentralized care by partnering with other community-based organizations. The essential elements of this hybrid service in the voluntary sector are the use of nonprofessional community health workers through a task sharing model and the use of telepsychiatry. Task sharing allows the professionals (psychiatrists, psychiatric social workers, clinical psychologists, and occupational therapist) to train, empower, supervise, and support longitudinally nonprofessional community mental health workers in delivering care. As the number of clinics and number of patients (more than 4,000) grew, telepsychiatry became more and more important. During the current COVID pandemic, this has become the predominant model of service delivery.

The various components of telepsychiatry as practiced in MHAT are as follows:

1. Use of videoconferencing: This was primarily used by the nonmedical professionals of MHAT from the clinics they were visiting to communicate with the psychiatrists. This was mandatory for all newly enrolled patients but for existing patients it was used when there was a clinical or social need. The equipment used were laptop computers at both ends. Videoconferencing was also used, but less often, by the mental health workers in the community where it would be through mobile phones. In this clinical service the commonly available free software was used.
2. Use of mobile phones: During the case discussion and clinical supervision, mobile phones are routinely used. This could be from the mental health clinics and community it served during the weekly visits by the MHAT team or by volunteers who play the role of community case managers round the clock.
3. Electronic database: All patients' medical records are securely maintained in a customized cloud-based database. The documentation made by nonmedical team members are monitored in real time by psychiatrists working remotely. The electronic prescriptions are then generated by the psychiatrists from the same database and transmitted via email to the community clinics for dispensing medications. The clinics are encouraged to print and file a paper copy of the prescriptions for the patient records which are safely maintained in the clinics. The database generates appointments for future clinic visits and allows the tracking of all patients to minimize dropouts and nonadherence.
4. Use of mobile apps: The most important of the mobile apps used is the one for encouraging medication adherence. This app, called "99 DOTS," was successfully used in India for improving medication adherence in tuberculosis treatment. Patients or family members are encouraged to dial a toll-free number and hang up after they complete hearing to the options of an automated answer service. The app alerts the community-level workers when phone calls are not received from a particular patient.
5. Use of videoconferencing, appointment booking systems, and various apps for administrative and training requirements.

Spandana Home Healthcare Model

In May 2020, with the need arising of COVID-19 pandemic to provide services by visiting patients at home, Spandana Healthcare in Bangalore in association with Health Heal Home Healthcare services launched the Home Healthcare Services. This involved visit by mental health registered nurse along with coordinated video consultation with the specialist psychiatrist. Following the video consultation with the specialist, e-prescriptions were generated. This visit also involved administering of depot injectable medications whenever needed. This model could possibly help improve the continuity of care.

Conclusion

Telepsychiatry though has gained attention during COVID pandemic is not a new concept, nonetheless it will continue evolve. Over the last few decades, it has been gradually developing and spreading its roots in various health sectors in the USA. With the implementation of guidelines for the use of telemedicine, it has gained importance. Combining in-person review by mental health nurse or a social worker after visiting the patient at home, along with video consultation termed as hybrid telepsychiatry could act as substitute for an existing model of outpatient-based reviews. Availability of limited specialist time can be efficiently utilized by incorporating the hybrid telepsychiatry model. Experience of this model with adaptations based on the need in India by an NGO and private sector are discussed in this review. However, one needs to examine the efficiency of this model, acceptability, and outcome in comparison with the traditional face-to-face reviews in the busy outpatient clinics, after it is operationalized and has expanded.

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The Future of Telepsychiatry in India

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ABSTRACT

Technology is bringing about a revolution in every field and mental health care is no exception. The ongoing COVID-19 pandemic has provided us with both a need and an opportunity to use technology as means to improve access to mental health care. Hence, it is imperative to expand and harness the tremendous potential of telepsychiatry by expanding the scope of its applications and the future possibilities. In this article, we explore the different avenues in digital innovation that is revolutionizing the practice in psychiatry like mental health applications, artificial intelligence, e-portals, and technology leveraging for building capacity. Also, we have also visualized what the future has in store for our practice of psychiatry, considering how rapid technological advances can occur and how these advances will impact us. There will be challenges on the road ahead, especially for a country like India for instance; the digital divide, lack of knowledge to utilize the available technology and the need for a quality

control and regulation. However, it is safe to presume that telepsychiatry will evolve and progress beyond these roadblocks and will fulfill its role in transforming health care. Telepsychiatry will improve the health care capacity to interact with patients and family. The blurring of national and international borders will also open international opportunities to psychiatrist in India, heralding a new wave of virtual health tourism.

Keywords: Telepsychiatry, telemedicine, guidelines

This is the era of digital revolution. Over the last two decades technology has grown by leaps and bounds reaching all walks of life. This revolution has reached the field of medicine too and is changing the psychiatry clinical practice.[1] Telepsychiatry is the provision of psychiatric care remotely using different forms of telecommunication. Drago et al. defined telepsychiatry as the "the use of electronic communication and information technologies to provide or support clinical psychiatric care at a distance."[2] Importance of telepsychiatry as a vehicle for delivering mental health services is becoming increasingly relevant as the burden of psychiatric illnesses is increasing[3] and human resources are consistently inadequate to handle the same.[4] This development is motored along by efforts and need to improve access to mental health services, quality of care, increase community-based care and integration of psychiatric services into primary care.

In the ongoing coronavirus disease (COVID) pandemic, travel restrictions and reduced in-person interactions has provided a huge impetus to telepsychiatry. Patients and caregivers face hardship to access and avail appropriate consultations and medications. Recent advancements in technology may be used to build and maintain resilience, improve clinical care, facilitate recovery, and also to expand opportunities for education, administration, and research in mental health. The silver lining is that the pandemic has provided us both a need and opportunity to use technology as a means to reach such individuals. It is the need of the hour to expand and utilize the tremendous potential that telepsychiatry possesses by expanding the currently explored applications and newer promising future possibilities. In this article, the authors discuss the future of psychiatry practice in conjunction with the advances in digital health.

Health Education/Capacity Building: Leveraging Digital Technology

The Mental Healthcare Act, 2017 (MHCA 2017), aims to protect, promote, and fulfill the rights of persons with mental illness (PMI), and places the responsibility on the state to ensure mental health care to all its citizens. The MHCA, 2017, seeks to overhaul the existing system and its implementation can cost around 94,073 crore rupees approximately, for the government. Also, the government would incur a loss for noninvestment in mental health care, which is calculated to be 6.5 times more per year than the investment needed to implement MHCA, 2017.[4] According to the World Mental Health Atlas (2014),[5] the number of psychiatrist per lakh of population in India was 0.75, with even lesser number of psychologists and psychiatric social workers. Even the median number of psychiatrists is only 0.2/100,000 in India as opposed to a global median of 3/100,000 population. The numbers are equally dismal for other mental health professionals (MHPs) also. Median number of psychologist, social workers, and nurses are 0.03, 0.03, and 0.05/100,000, respectively.[5] Assuming India would need three human resources per lakh population in each category, we would need 42 more years to fulfill the demand for psychiatrists, 74 more years for nurses, and 76 more years for clinical psychologists and psychiatric social workers. This arbitrary calculation holds good if we assume the population remains constant.

One critical area where telepsychiatry can bring about a revolution is in capacity building by leveraging digital technology. Traditional training programs involving didactic lectures, video demonstrations, power point presentations in classroom and group format often fail to translate into clinical skills required for early diagnosis and treatment of psychiatric disorders. Training experiences through telepsychiatry is advantageous since it incorporates a didactic curriculum, flexibility to adopt between a pedagogical or andragogical approach depending on the professional undergoing training, undertaking a bottom-up approach, offering the opportunity to obtain service-based learning while also providing the students the flexibility to attend training classes at their convenience. Further, technology enabled learning can help them attend simulated telepsychiatry consultations, teleconference journal clubs, satellite broadcasts, and web-based modules, etc.[6] Even though a psychiatry trainee may be familiar with the use of technology for communication, they might need to be imparted specific skills to understand the context of telepsychiatry practice like understanding the health systems involved, developing the clinical skills required to decrease the interpersonal distance and incorporate interpersonal communication and collaborative skills. One such example in the use of technology in psychiatry training is the Initiative for Academics and Nurturing Skills (INDIANS) for up scaling post-graduate students in psychiatry along with early career psychiatrists.[7] Telepsychiatry can also introduce the concept of observership in psychiatry. A trainee can observe the process of evaluating, diagnosing, and monitoring the progress of a patient through online modules. This can completely overhaul postgraduation training by creating chances for more exposures into difficult clinical scenarios along with improving chances for liaison. This might result in producing more competent professionals.

Further owing to the lack of mental health care human resources across the world, especially in low- and middle-income countries (LAMI) countries; technology can be harnessed to impart education and training to not only medical students but also primary care doctors, nurses, social workers, psychologists, and other paramedical staff. This will help in not only capacity building but also reaching the unreached and serving the underserved population; eventually addressing the huge treatment gap in psychiatric disorders and reducing its morbidity. Considering the dearth of human resources, the NIMHANS Digital Academy was started to empower existing human resources. Digital certification courses like Diploma in Community Mental Health[8] and Diploma in Primary Care Psychiatry[9,10] were started. These programs are currently underway in different states like Chhattisgarh, Bi-

har, and Uttarakhand to empower primary care doctors in psychiatry. Also, the Board of Governors (BoG) in supersession to the Medical Council of India (MCI) and NIMHANS, Bengaluru, are in the process of developing an online module/curriculum for the practice of telemedicine. Registered medical practitioners (RMPs) would be mandated to complete the module within three years of its release to practice telemedicine.

Mental Health Apps: Role in Telepsychiatry Practice

One important area where telepsychiatry has tremendous potential is in personalizing telehealth. Recent advances in telecommunication have made smartphones ubiquitous and can be harvested to provide personalized care for PMI. Mobile phone applications specific for individual mental illness can offer a dynamic two-way connectivity to a multidisciplinary team. A PMI may register self in the application that is specific to his/her diagnosis. This application may become a safe house for all the clinical details like duration of illness, clinical features, course of the illness, medication status, allergies, comorbid conditions, a checklist to monitor adherence and side effects, and an e-prescription. This application might also allow the specialist to monitor and manage the patient remotely, which is akin to running a mental health clinic albeit digitally. One such application that has the potential to harness all such endeavors is the learn, assess, manage, and prevent (LAMP) platform developed by Torous et al.[11] With a help of a digital navigator who monitors all the patient related data like sleep patterns, physical activity, and stressors, the LAMP platform can formulate a relapse risk algorithm and helps in developing a personalized care plan.[11] These applications also offer a real time behavioral data and can provide information on how the symptoms differ across various dimensions. These apps eschew the need for any customized hardware while at the same time offering real-time data.[12]

Recently the U.S. Food and Drug Administration (FDA) has approved an innovative application for substance use disorder to be used along with routine outpatient management—reSET (Pear Pharmaceutics). re-SET is a part of a comprehensive care plan for patients with substance use disorders.[13] In the future there can be different applications dedicated for different purposes like an application that can help in diagnosis, which can further be disease specific, applications to monitor adherence and serve as reminder for medications or applications to collect and store individual health records. These applications when combined with artificial intelligence (AI) create the possibility of tailored treatment, which is discussed later. One essential challenge in the currently available applications is that they are developed unilaterally by engineers with no inputs from medical professionals. Data privacy and security issues remain pertinent but with technology growing leaps and bounds those concerns could also be addressed easily and applications can be tailored to suit each patient.

Virtual Reality and Artificial Intelligence: Changing the Future Course of Telepsychiatry Practice

AI in psychiatry encompasses the use of techniques such as automated language processing and machine learning algorithms to assess a patient's mental state. The application of AI extends across multiple domains ranging from diagnosis, prediction to management of psychiatric illness. There are currently applications that monitor through AI the pattern of smartphone usage and detect individuals at risk for developing mental health problems.[14] AI-based techniques have also become useful in predicting psychiatric symptoms including psychosis, which present as manifestations of disorders of thought, disorganization in behavior, or catatonia as well as predicting treatment response.[15] Machine learning algorithms have also aided in reducing the false-negative and false-positive diagnoses by supplementing human clinical ratings. Virtual reality (VR) is a computer-generated simulation, like images and sounds that a person can interact with by wearing special equipment. There are overwhelming evidences that prove that VR as an interaction and distraction tool is useful in psychiatric illnesses, such as PTSD, anxiety, specific phobia, schizophrenia, autism, dementia, etc.[16] VR technology can augment in vitro therapy particularly when in vivo exposure is difficult. Further in PTSD and specific phobias, with VR the exposure can be personalized for specific situations and stimuli that can evoke the patient's most troubling symptoms. Soon machine learning will benefit patients by increasing the likelihood of them receiving a personalized treatment regime and will help them in receiving psychological treatment through computerized conversational bots. AI can even change the face of psychiatric classification by identifying association between symptoms, neurobiological status, and functioning across diagnosis.[17]

In the future, the AI could aid a clinician in diagnosing a patient, can work in tandem with designated applications—analyze a host of data like past history, risk factors, side effects, existing treatment guidelines, etc., and arrive at the best possible treatment plan for any given patient—bringing in the possibility of providing "tailored treatment." Further, the AI may analyze and notify demands of drugs, take account of the existing stock and automatically place an order for the drugs to be delivered to designated places. It is possible, along with medications, a doctor may also prescribe usage of a specific application for each disorder, which will serve different purposes like monitoring the patients symptoms, generating e-prescriptions, psychoeducation tools, monitoring adherence, and alerting both the stakeholders if any warning signs arise. Thus, ensuring a comprehensive care is delivered at the fingertips. Chat bots are an interesting addition in the field of AI. They are conversational agents and can play an important role in screening, diagnosis, and treatment of mental illnesses. In addition to this, they can also prove to be useful in suicide prevention and management.

Online Therapy

Over the past few years, there has been an increase in online support groups probably in response to diminishing health care resources. A Cochrane review had even reported that group therapy is more advantageous than self-help for tobacco cessation.[18] These groups cater to individuals suffering from problems like depression, suicidal tendencies, substance abuse, malignancy, and eating disorders. The popularity that social media has gained has resulted in an opportunity for the online

peer networks to aid in mental health recovery and to reduce stigma. This becomes even more important in LAMI countries in reaching the unreached. These peer support groups are creating a paradigm shift by increasing access to health information and providing support to PMI. However, further research needs to expand upon these advantages and specifically address the question of whether the skills learned from peers through an online platform translates into a sustained improvement in social and occupational functioning in the real world. In addition, methodological challenges do remain, specifically in the form of how to evaluate such interventions and collect objective outcome measures.

Mental Health Care Management System: An Innovative Solution from NIMHANS

The MHCA 2017 has provided a legally binding right to mental health care for over 1.3 billion people. The Department of Health, Government of Karnataka, India, initiated a digital innovation titled "Mental Health Management System" (e-Manas; the term "manas" in vernacular language means "mind") in collaboration with Telemedicine Centre, NIMHANS, Bengaluru, India, and Electronic Health Research Centre, International Institute of Information Technology, Bengaluru (EHRC-IIIT-B), India. e-Manas is a state-wide digital registry of Mental Health Establishments (MHEs), MHPs, PMIs, and their treatment records in compliance with the MHCA, 2017. This platform brings together all the stake holders in the mental health field, that is, regulatory authorities, district review boards, MHEs, MHPs, PMIs, and their caregivers. e-Manas is the first step in integrating information technology and the mental health system. It is the first initiative in the country, completely free of cost, funded by the Government of Karnataka, and may play a crucial role during the times of emergencies. The plethora of data that can be made available through the portal may help in analyzing epidemiological trends, which might lead to tailoring improved service delivery. All the data available can be collated and can be used to monitor the mental health programs, availability of medicines in all centers by corresponding mental health authorities. This will provide seamless services to the people in need and assist the right-based approach as directed by the law. On similar lines, Telemedicine Centre, NIMHANS, Bangalore, and IIITB, Bangalore, have initiated a development of comprehensive portal for prevention of suicide across India titled—"NIMHANS Centre for Suicide Prevention," with the aim of creating awareness on mental illness and stress, prevention of suicide, promotion of well-being and development of human resources (gatekeeper training program) to curtail the incidence of suicide.[19]

Electronic Health/Medical Records

Electronic health records (EHRs) portals are provider-tethered applications that allow patients to electronically access health information that is documented and managed by a health care institution.[20,21] These are very important for patients with mental illness because the psychiatrists are mandated by the MHCA 2017 to maintain a basic medical record. These portals are owned and managed by health care institutions (such as hospitals). Under these portals, institutions provide patients with web-based limited access to their clinical data recorded in patients' health records. Patients can then access this information, read, and print it, or integrate it into any (electronic or paper-based) type of patient-owned record. Apart from this, electronic patient portals also offer provisions for requesting prescriptions for medication refill, appointment viewing and scheduling, access to general medical information, such as guidelines, or secure messaging between a patient and an institution; and maintaining clinical logs like blood pressure, pulse rate, behavior and mood charts by patients. According to a study conducted by Kipping et al., there is evidence to suggest that access to EHRs by patients may have positive effects on activation and recovery in patients with severe mental illnesses (SMI) with increase in appointment adherence; and also simultaneously improve organizational efficiencies in a tertiary level mental health care facility.[22] The e-Manas portal mentioned earlier is one such portal that aims to create an easily accessible patient health record not only to the patients but also across different establishments within the state. The EHRs can be the cause of an apprehension also. With the increase in the practice of telepsychiatry and with the usage of digital records, there is an increase in the concern about storing data in cloud, particularly with respect to fear of loss of data and the requirement to have a physical server in India to store details of Indian Citizens. Perhaps in the future, the data might be condensed into the form of a smartcard that a patient can carry around and the data can be retrieved by any health professional probably through a pin provided by the patient. There are reports of implants being used in by citizens of Sweden to ease their daily routine by storing unique ID, emergency contact details, health records, financial transactions, and other details for providing services.[23] Perhaps there might come a day in which every citizens can store his entire clinical data in an implanted chip, which will be a game changer in health care. Further, there may be a national regulation of implanting this chip to every citizen immediately after the birth with unique ID and storing the health status from birth till death.

Future Opportunities and Challenges of Telepsychiatry

A proposed one stop center: Telepsychiatry soon can bring everyone together under one roof. "One stop center" is one such possibility. Currently woman or child victims of abuse must visit multiple places to consult different professionals like a psychiatrist, gynecologist, pediatrician, a legal counsel, etc. With advances in telehealth all such services can be provided under one roof. One stop center can be a virtual center, which will remove the need for a woman or a child who has suffered from abuse to go from one place to another or perhaps even a court. They can attend all such visits from their home or woman/child friendly center and can obtain all these services through video conferencing. These centers can also serve as a place to provide mental health and psychosocial support and even long-term psychological support for such victims. One stop center can also help patient support groups like alcoholic anonymous, narcotic anonymous, etc. Patients can get psychiatric consultation and psychosocial support under one roof through such one stop centers.

Mental Health Review Boards (MHRB): Telepsychiatry has the potential to transform the functioning of the MHRB, which are a mandate as per the MHCA, 2017. Integrated online portals like MHMS along with EHRs could drastically ease the review process for admission and discharge of patients by the MHRB. It can also aid in inspection and audit of MHEs owing to the ease of availability of records due to the usage of an integrated portal.

Tele-evidence: Further such a setup can be also useful for providing Tele-evidencing in a court of law, especially for doctors to provide their expert witness. This will eschew the need for the doctor to travel to different places to provide evidence. Providing evidence online is going to change the way doctors perceive the court and giving evidence in the court of law.

Telepsychiatry in community settings: One other setup where telepsychiatry can be indispensable in the future is the rehabilitation centers like halfway homes, long-stay homes, custodial care homes, prisons, juvenile homes, reception centers, elderly care home, orphanages, etc., where psychiatric morbidities are high. Considering the already existing dearth of human resources, telepsychiatry is the best possible solution to cater to the mental health needs of such unreached population. The same can also be applicable to religious centers like the "Dawa and Dua Program,"[24] which can result in providing psychiatric services to many patients visiting such places.

Wellness app "Gurukool": Apart from helping patients with mental illness, certain wellness applications would come into the picture soon. Telemedicine center, NIMHANS in association with stake holders such as Centre for Development of Advanced Computing (CDAC), Pune, and Armed Forces Medical College (AFMC), Pune, is developing an app called "Gurukool." This application will be used to impart life skills, to impart sex education, life style modifications, sensitize an individual toward mental illness, teach them to cope with stress, and in promoting positive mental health, targeting predominantly the healthy population or population at risk.

Registry of mental disorders: National Level Registry of Mental Health is an advanced form of electronic record/portal can also be available soon. This may be indispensable to monitor high risk individuals like at risk children, persons prone to develop mental illnesses, victim of abuse, survivors of disasters, etc. This can help in tracking such individuals and help to deliver effective early intervention.

Wearable devices: One other area that is rapidly coming to the spotlight is the use of wearable devices in telemedicine. These devices might be used to digitally transmit patient data at real time to the psychiatrists, which might be useful in the future to monitor side effects and drug levels through body fluids, electroencephalography or electrocardiography changes, to ensure adherence by setting up automated reminders to the patient, etc. Owing to the limitations of physical examination during teleconsultations, Telemedicine Centre, NIMHANS has recently proposed a novel concept of "virtual (video-based) physical examination" (VPE).[25] Physicians can conduct inspection part of systemic physical examination during teleconsultations. At rest inspection for pallor, icterus, cyanosis, skin lesions, abnormal movements, etc., can be conducted. Apart from this, inspection after providing instructions can be done to examine tremors, deglutition, and gait can also be conducted. Certain scales to grade symptoms like Abnormal Involuntary Movement Scale (AIMS), Unified Parkinson's Disease Rating Scale (UPDRS) may also be applied virtually. This concept needs further evaluation, expansion, and validation but will be greatly benefited when used concomitantly with a wearable device.

Cost effectiveness: All these advances can result in a decrease in the costs incurred on the patient. Considering the need for only a minimum infrastructure to practice telepsychiatry, decreasing the need to travel the consultation charges can come down significantly along with decrease in the out of pocket expenditure. The cost-effectiveness, ability to get expert consultation with minimal effort and costs will eventually result in improving the quality of life for the patients.

With all the recent advances, technology will transform how psychiatry will be practiced. It may even result in the development of bed less hospitals, where telepsychiatry will be the predominant mode of service delivery. However as with all revolution the road ahead must address some problems. The main challenge that can arise in a country like India is the "digital divide" existing in the country and across the world, with certain rural areas yet to have proper internet connectivity. To compound this using all these applications and devices will require some skill and knowledge. All these advances will pose a challenge to people from lesser educational background, which might hinder them from using such services. In next two decades, the telepsychiatry practice is going to cut across many boundaries both nationally and internationally. Telepsychiatry consultation and online therapy will be available for international clients. India may play a global leader role in providing health services using digital technology.

Further, there is a need to have quality control for all such applications and AI. A quality control and regulation are essential to ensure all the services to be bug free, safety of health data and to prevent from data loss or theft. Further third-party vendors need to be regulated strictly to prevent exploitation. In order to prevent exploitation of patients and professionals in the future guidelines needs to be developed and adherence to the guidelines should be strictly monitored. Finally, the absence of an objective standardized measurement like other medical fields and the available structure tools are used majorly in research settings rather than in routine clinical practice. Fortney et al. have suggested that measurement-based care can improve the quality of mental health care.[26]

Conclusion

Information technology advances including applications and AI do not readily answer all these problems but they are already bringing out innovations in assessment, novelties in data collection, increasing access to mental health care, and changing the very face of service delivery. The future will keep on changing the clinical processes especially with VR, synchronous and asynchronous video conferences and newer technologies that we are yet to utilize may help in reaching the deserved populations. Telepsychiatry will evolve with developments across the dimensions of technology, clinical applications, and care models. This can be further promoted by incentivizing telepsychiatry. With this evolution, telepsychiatry will fulfil its role in transforming health care

by increasing the capacity to interact with patients and family. The blurring of national and international borders will open international opportunities to psychiatrist in India. Indian psychiatrist will be providing services to international clients in real time. This will herald a new wave of regulating and monitoring of virtual health tourism across the world.

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