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Profile and telehealth usability of patients attending a telepsychiatry unit in south India during pandemic: a prospective observational study

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ABSTRACT. Telepsychiatry, which refers to the delivery of mentalhealth services throughvideo-based conferencing, has immense potential to resolve the mental health disparities. Era of telepsychiatry came into full force during the COVID -19 pandemic in the year 2020 in India. The literature on profile of patients attending a telepsychiatry unit is limited as the official guidelines for Telemedicine was released by the government of India in March 2020. This article provides a state-of-art analysis on the profile, telehealth usability, diagnosis, drug treatments of patients attending a telepsychiatry unit in a Union Territory in south India. 1. To profile the telepsychiatry usability by using standard questionnaire. 2. To compare the telepsychiatry usage between 2020 and 2021 (during lockdown 1 & lockdown 2). A retrospective analysis of the profile of patients attending a telepsychiatry unit in south India during the consecutive years of 2020 and 2021 was made. Demographic data regarding the age, sex, marital status, occupation, location, number of online consultations made were collected. Diagnosis was made in accordance with the International Classification of diseases tenth edition. Various groups of drugs used like antidepressants, antipsychotics, mood stabilisers, benzodiazepines. Comparison of data between the two years was made. In the year 2020, 147 teleconsultations were made and in the year 2021 46 consultations were done. Among the study participants, 62% were female. In the year 2020, psychosis was found to be the reported more(34%) and in 2021, adjustment disorder was higher (35%). Among the medications, antidepressants (35%) were the commonly prescribed group followed by antipsychotics(13%). Telepsychiatry is a budding phenomenon in India and this study is the first of its kind to throw light on the profile, drug treatment of patients attending a telepsychiatry set up.

Keywords: telepsychiatry, COVID 19, psychosis, adjustment disorder, antidepressants.

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Introduction

Telepsychiatry, which refers to the delivery of mental health services through video-based conferencing, has immense potential to resolve the mental health disparities. People living in rural areas and those having limited access to mental health care are easily connected via telepsychiatry services (Hubley, Lynch, Schneck, Thomas, & Shore, 2016). The term 'Telepsychiatry' was first used in Massachusetts General Hospital in 1973 (Dwyer, 1973). Telepsychiatry projects have been from the year 1959 in many western countries but the higher costs of equipment and transmission, limited availability of the equipments, difficulties in using those equipments never made it a widespread mode. However recent advances, increasing availability of user pro systems like smart phones have led to the wider use of telepsychiatry services since the 1990s. Various programs in the fields of Child, geriatric, forensic and rural psychiatry have been launched ever since then (Ruskin et al., 2004). The various types of telemedicine are live (synchronous), two-way, interactive, audio and video-based communication aimed at delivering long distance care (Layfield et al., 2020).

The COVID-19 pandemic is an unexpected event that has led to a drastic shift in the medicine practice around the world. To balance the ongoing need for patient care with the risks to patient and staff safety, the CDC (Centre for Disease Control) have issued recommendations to consider telephone or video-based consultation as alternatives (Centers for Disease Control and Prevention [CDC], 2020). The World Health Organization (WHO) defines telemedicine as the 'delivery of health care services by all health care professionals using technology for the exchange of valid information for the diagnosis, treatment, and prevention of disease and injuries' (World Health Organization [WHO], (1997).

The first telemedicine initiative in India was by Indian Space Research Organization (ISRO) in the year 2001 which was implemented in many States across India with the objectives of bridging the health-care gap. However because of inadequate human resources and poor technical support the intended objectives went unmet (Suchandra et al., 2021). In India, the era of telemedicine started with the release of Telemedicine Guidelines by the Board of Governors in association with the NITI AYOG in March 2020. It defines telehealth as The delivery and facilitation of health and health-related services including medical care, provider and patient education, health information services, and self-care via telecommunications and digital communication technologies (CDC, 2020).

Very few data pertaining to telepsychiatry is found in Indian literature as the guidelines was only launched in 2020 in view of COVID 19 pandemic. National Institute of Mental Health and Neurosciences(NIMHANS) data shows that telepsychiatry services provided consultations successfully for the following number of patients: April 2018–March 2019: 288; April 2019–March 2020: 330; April 2020–Dec 2020: 933. Also Continuum of Care (COC): audio-based consultations, Tele-psychiatric aftercare (TAC) clinic: video based consultations, were some of the policies adopted by NIMHANS.\But not much data isavailable regarding the profile and telehealth usability by public in other parts of the country.This study is an attempt to give an outline of the profile of patients enrolling in a telepsychiatry unit in a Union Territory in South India. This study also aim at comparing the difference in the profile of patients in two successive years (2020 and 2021).

Hypothesis

Does the patients accept and utilises the telepsychiatry services?

Objectives

1.To profile the telepsychiatry usability by using standard questionnaire
2. To compare the telepsychiatry usage between 2020 and 2021 (during lockdown 1 & lockdown 2)

Materials and methods

This was a cross sectional study conducted in tertiary care centre during 2020 and 2021. Telemedicine guidelines of India states that telemedicine can be practiced through Video (Telemedicine facility, Apps, Video on chat platforms, Skype/Face time) Audio (Phone, VOIP, Apps etc), Text Based, Telemedicine chat based applications (specialized telemedicine smartphone Apps, Websites, other internet-based systems) Asynchronous (e-mail/Fax etc.) (CDC, 2020). An announcement was made in our mental health establishment that telepsychiatry consultation would be available to patients through audio, video and chat mode. Patients can themselves choose the comfortable and easily accessible modalities like google meet, whatsapp video call or zoom based upon their data and equipment. Same was advertised through the local newspaper, google and through official website. Helpline numbers were given to the people. Patients who opted for telepsychiatry consultation were asked to fill a google form in which data regarding their name, age, sex, place and their ID details collected. After this, a consultation slot was allotted and was intimated to them through SMS (Short Message Services). Informed consent was obtained from the study participants. The Electronic Medical Records (EMR) of patients aged 18-75 years recruited from April 2020-December 2021 was recruited after obtaining the Ethics Committee Approval. Study was in accordance with the STROBE checklist(Strengthening the Reporting of Observational Studies in Epidemiology. Sample size was calculated using Gpower computer software. A total sample size of 111 was calculated to detect a large effect (d = 0.30). The power of the test was fixed at 90% and alpha at 0.05 (Figure 1).

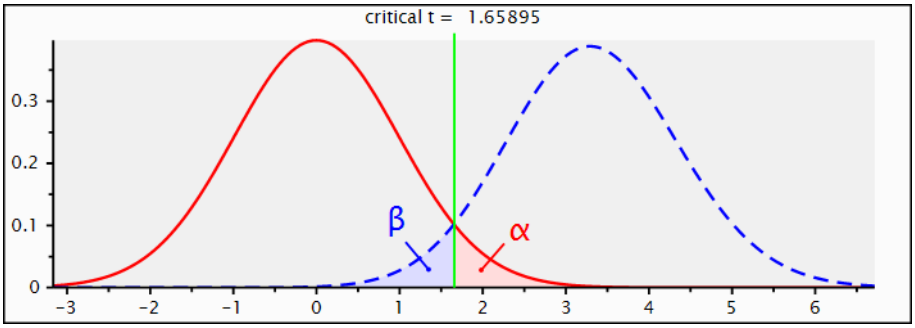

Figure 1. Sample size calculation using G power software

INCLUSION CRITERIA:

Patients 18-75 years of age who registered themselves through the google form and available for online consultation in the designated slot time.

EXCLUSION CRITERIA:

Patients who registered but were not available even after 3 SMS reminders and a phone call.Patient enrolment is depicted in Figure 2

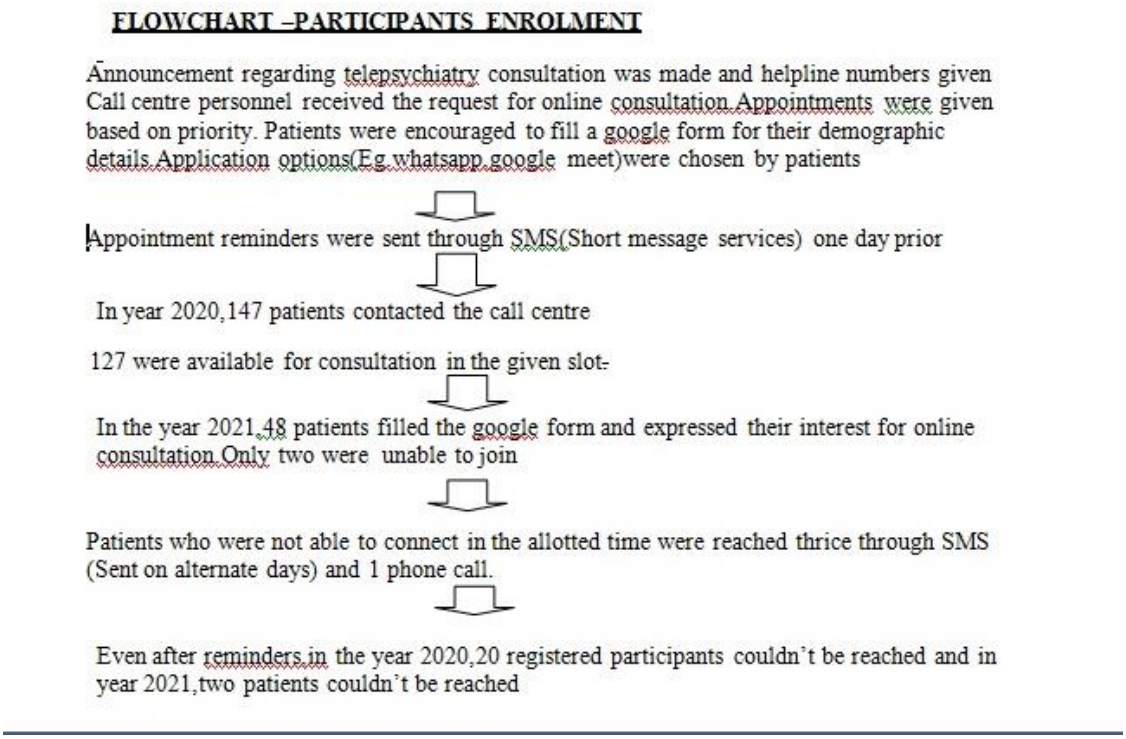

Figure 2. Flowchart of participant enrollment.

ASSESSMENT:

Demographic data was collected including Age, Sex, Place, Nature of consult ,Education, Occupation, Marital status. Details about diagnosis, number of online follow ups, Initiation of consult, mode of consult, substance use, comorbid illness. Data regarding the treatment aspects like antidepressants, antipsychotics, mood stabiliser, anxiolytics and other drugs were collected. Diagnosis of psychiatric illness was made in accordance with the International Classification of Diseases and data

Data analysis

Descriptive statistics were used to characterize the study population. Statistical significance was set at p value less than 0.05. The design and findings of this study were written in accordance with SQUIRE 2.0 guidelines

Results

The total number of study participants was 195 (147 in 2020 & 48 in 2021). The age of the study participants was in the range of 18 – 72 years. Among the study participants 38% were male and 62% were female. 147 Patients registered for online consultation in 2020, out of which 127 had consultation (86%). In 2021, 48 registered for online consultation, out of which 46 had online consultation (96%). In 2020, among the study participants 65% were new patients whereas 35% were follow up patients. In 2021, 51% were new patients and 49% were follow up patients. 22% of the study population had consultation for more than 4 times in 2020 whereas 15% had online consultation for more than 4 times in 2021. More than 74% of the study population had video consultation and 26% of the study population had audio consultation in 2020 where as in 2021, 80% had video consultation and 20% had audio consultation. Around 84% of the study population was from Pondicherry and 16% of the study population was from Tamil Nadu in 2020. In 2021 73% were from Puducherry and 27% were from neighbouring locations. 75% of the study population was having graduate educational qualification and 25% had educational

qualification at school level in 2020. In 2021, around 84% of the study population was having graduate educational qualification and 16% had educational qualification at school level. 66% of the study population was not employed whereas 34% of the study population was employed in various sectors. 82% of the study population was married where as 18% of the study population was unmarried (Table 1).

Table 1. Demographic details of the study participants.

S. No	Description		Response 2020 (%)	Response 2021 (%)
1	Gender	Male	32	38
		Female	68	62
	No of patients	Registered (n)	147	48
		Consulted (n)	127	46
2	Nature of study participants	New	65	51
		Follow up	35	49
3	No of consultation	More than 4 times	22	15
		Less than 4 times	78	85
4	Nature of consultation	Video consultation	74	80
		Audio consultation	26	20
5	Participant location	Local	84	80
		Outside the city	16	20
6	Initiation of consultation	Self	62	65
		For others	38	35
7	Educational qualification	Graduation	75	84
		School	25	16
8	Employment	Employed	66	55
		Un Employed	34	45
9	Marital status	Married	82	79
		Un married	18	21

Alcohol and Nicotine intake is the main substance use from the participants in 2020 and 2021. Diabetes, hypertension and migraine are the common co morbid illness among the participants in 2020 and 2021. Reason for online consult: 80% said because of lock down (say in other states- Lockdown restrictions) in 2020. In 2021, majority (85%) of the patient felt its time saving. Diagnoses of the psychiatric illness were made in accordance with the International Classification of Diseases tenth edition. The commonest mental health problem was psychosis in 2020, Where as in 2021, adjustment disorder was the main mental health problem.

The number of patients diagnosed with psychosis and adjustment disorder was significantly higher in 2021 when compared to 2020. ($p < 0.05$) (Table 2). The details of distribution of various diseases in 2020 and 2021 are explained in Table 2.

Table 2. Proportion of study population under various diagnosis and their representation.

Diagnosis	In 2020 (%)	In 2021 (%)	p value
Psychosis	34	10	0.009*
Acute stress reaction	2	1	0.15
Panic disorder	5	5	1.3
Dysthymia	1	1	0.9
Organic anxiety	1	1	0.9
Social anxiety	5	2	0.5
Somatoform pain disorder	1	1	0.9
Panic attacks	12	8	0.4
Adjustment disorder	8	35	0.001*
BPAD	5	9	0.4
GAD	4	2	0.43
Depression	7	1	0.12
RDD	1	1	0.9
Mental and behavioral disorders due to physiological factors	2	2	0.9
Mixed anxiety with depression	1	5	0.4
Insomnia	11	15	0.6

Data expressed in percentage; $p < 0.05$ statistically significant; Chi square test was used.

The use of antidepressants for treatment of mental health diseases was significantly higher in 2021 when compared to 2020 ($p < 0.05$) (Table 3). The details of drug use and its representation in 2020 and 2021 is explained in Table 3.

Table 3. Proportion of drugs used and its comparison between 2020 & 2021.

Category of drugs	In 2020 (%)	In 2021 (%)	p value
Antidepressants	35	53	0.003*
Antipsychotics	13	6	0.15
Benzodiazepines	19	23	0.26
Mood stabilizers	2	3	0.367
Anxiolytics	13	17	0.42
Others	18	2	0.007*

Data expressed in percentage; $p < 0.05$ statistically significant; Chi square test was used.

Discussion

There is a large evidence for the use of tele psychiatry as a successful delivery method for mental health services. Contemporary research including reviews by Hubley et al. (2016) states that patients are very much satisfied intel e psychiatry mode when compared with Face to Face (FTF) delivery of mental health care interventions. This study also states that the difference in cost effectiveness can be based on the geographic location of the participants say urban or rural (Hubley et al., 2016). In our study majority(80%) were from the city limits. Also more than 80% said that they found telepsychiatry to be time saving. This might be due to the easy availability of gadgets like laptops, cell phones and good internet connectivity within the city limits which facilitated the online consultation. Also the travel restrictions during the pandemic period persuaded many to take up the option of an online consultation.

In 2020, there were four lockdowns from March 2020-May 2020 during which travel restrictions were there. Unlocking evolved in five phases from May 2020 (Board of Governors, 2020). This justifies the gradual decrease from 127 to 46 patients in the year 2021.This is similar to the research done by NIMHANS (National Institute of Mental Health and Neuro Sciences) which states that nearly 146 consultations were recorded in the year 2020 during lockdown when the out patient department of the Institute was closed (Suchandra et al., 2021). Telehealth study by Demeke et al. (2020).

States that in United States of America states that telehealth consultations in rural was 29% and in urban was 55.1% (Bekset al, 2023). Our study depicts that telepsychiatric consultations in urban was 84% in 2020 against 73% in 2021.In 2020, nearly 16% of the population consulted were from rural against 24% in the year 2021. Another study by Fisher et al stated that video consultations for physical conditions amounted to 43% and for behavioural conditions it was about 53% (Fischer, Uscher-Pines, Roth, & Breslau, 2021). In our study percentage of patients enrolled for video consultation was 80 in the year 2020 and 74 in the year 2021.Study done by Ellerie weber states that 3+ comorbid physical illnesses were found in 12% of the telehealth consult patients. But in our study one comorbidity was only reported (Weber, Miller, Astha, Janewic, & Benn, 2020).

Use of telemedicine for longer periods were found to decrease the patient adherence in studies conducted by Kinoshita et al. (2020). Whereas in our study, 22% had online consultations more than 4 times in 2020 against 15% in the year 2021. This highlights the interest of the patients to seek online modality for consultation in a repeated fashion. In a telepsychiatry study done on COVID patients by Zarghami, Farjam, Fakhraei, Hashemzadeh and Yazdanpanah (2020). It was found that majority had adjustment disorder followed by major depressive disorder and generalised anxiety disorder (Zarghami et al., 2020). In our study psychosis was found to be higher in the year 2020 as opposed to adjustment disorder in 2021. COVID status was not found to be positive in any of the patients though. Emergency situations like delirium, substance withdrawal, suicidality, movement disorders were not reported in our study as majority among this group sort direct consultation and our department services were open for direct consultations throughout the pandemic.

Regarding the medication usage, antidepressants were used widely in both 2020 as well in 2021.This can be due to the higher reporting of panic attacks and adjustment disorder. Comparison between the two was found to have a statistically significant p value of less than 0.05. Antidepressants were followed by antipsychotics as psychosis was the most common diagnosis in 2020.Psychotherapy was not accounted in our study. Also females were reported higher in our study similar to studies done in COVID patients where females were preponderant (Zarghami et al., 2020).

Previous studies quoted that the commonest conditions were mood disorders, anxiety, and substance use disorders (Gajaria, Conn, & Madan, 2015). The difference in our study might be due to the fact that psychotic patients need long-term drug management. Monthly antipsychotic refills and follow up were greatly affected due to travel restrictions of COVID. This might have led to an exacerbation of psychotic episodes. Also antipsychotics will not be dispersed without a prescription. This might have led to increased teleconsultation persuasion.COVID status was not found to be positive in any of the patients though. Emergency situations like delirium, substance withdrawal, suicidality, and movement disorders were not reported in our study as the majority of this group sort direct consultation and our department services were open for direct consultations throughout the pandemic.

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The steady fall in the number of patients in 2021 can be accounted to the less travel restrictions in India in the year 2021. Poilicies were adopted and health establishments tuned themselves according to the pandemic by having fine regulations regarding face to face consults. This paved way to the rise of direct consultations in the year 2021. Some limitations might be the small sample size. The study was conducted in a small Union Territory in south India so whether the results can be generalised to the whole of India is questionable. However it is the first of its kind to compare the demographic details, diagnosis and treatments aspects of the patients who underwent telepsychiatric consultation in two successive years of the pandemic.

Conclusion

Psychosis and adjustment disorders were found to be higher in patients attending a telepsychiatry unit in south India. Further long term comprehensive assessments might provide a detailed description about few other conditions like emergency psychiatry which is untouched in this study. Telepsychiatry in India is an evolving field. Emphasis must be given to the various barriers and facilitators for teleconsultation in India with a special note on telepsychiatry. The long term scope of telepsychiatry after the pandemic has to be explored for better utility and patient care in the future.

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