

Role of the Telemental Health Services During the COVID-19 Pandemic: A Systematic Review



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SUMMARY

Objective: The COVID-19 pandemic has directed the use of telemedicine and digital mental health services to meet the needs of people in order to maintain physical distancing by preventing person to person contact. The aim of this review is to highlight the role of telemental health services during the COVID-19 pandemic.

Method: An electronic search was carried out between January 01, 2020 and October 31, 2020 to explore the utilization of telehealth services for mental health problems among adults during the COVID-19 pandemic. The primary source of literature was the structured search of major electronic databases from the MEDLINE (PubMed), CINAHL Plus, Science Direct and the Web of Science. We included nine published studies meeting the eligibility criteria.

Results: The role of telehealth identified in this review mainly focused on the applicability of this modality for assessing and managing various mental health problems in these unprecedented times. It also pointed out that the provision of telemental health support reduced the burden of mental health diseases and promoted the wellbeing of the individual. Further, it was witnessed that patients preferred remote consultation as compared to face-to-face visits in order to avoid contracting the virus and found online mental health interventions and psychological counseling very helpful to cope up with the current crisis.

Conclusion: The current COVID-19 lockdown has changed the management of the mental health problems of patients. The use of this innovative modality prevents transmission of infection and provides timely treatment to the community members most in need.

Keywords: Mental health, remote consultation, telemental health, psychology services, adults

INTRODUCTION

The 2019 coronavirus disease (COVID-19) pandemic has brought the world to a standstill with over 24,822,800 confirmed global cases and over 838,360 deaths reported as of 30 August 2020 by the World Health Organization (WHO) (WHO 2020a). First identified in Wuhan, China, coronavirus has swiftly crossed the national and international borders affecting over 216 countries (WHO 2020b). The exponential rise in the numbers of critically ill patients require intensive care and ventilatory support in hospitals which, at times, have exceeded the capacity of the weak health care infrastructure in the severely affected countries (Phua et al. 2020). This has led governments all over the world to implement strict quarantine measures such as imposing nationwide lockdown, closing all educational institutions and requiring people to work from home in order to prevent the spread of the virus and to reduce

hospital burden (Chakraborty and Chatterjee 2020, Zhou et al. 2020). Since the early stages of the pandemic, millions of people around the world have been living under strict isolation by quarantining themselves at home. Several studies conducted in different countries have all demonstrated the deleterious effects of social isolation on mental health and general psychosocial wellbeing of the common people (Wang et al. 2020, Ozamiz-Etxebarria et al. 2020, Özdin and Bayrak-Özdin 2020).

Strict lockdown and quarantine measures have affected the livelihoods of people around the world, escalating unemployment as economies and businesses suffer massive losses (Chakraborty and Chatterjee 2020). Unemployment claims have reached 30 million in the USA, 10 million in France and involved nearly 80% of all informal employment in the low- and middle-income countries (LMIC), causing

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people to struggle to make ends meet (Kretchmer 2020). Moreover, the pandemic has deprived people of outdoor leisure and social activities due to closure of gyms, swimming pools, cafes, clubs and bars, confining them within the boundaries of their homes. Travel restrictions have prevented people from meeting their loved ones and close friends. These factors coupled with the uncertainty and fear of catching the virus or losing loved ones to the disease have put people in significant distress, increased level of anxiety, tension and depression adding significantly to the global mental health burden (Kretchmer 2020, Özdin and Bayrak-Özdin 2020, Huang and Zhao 2020). A study conducted in China reported incidences of 35.1% for anxiety, 20.1% for depression and 18.2% for poor sleep quality among the participants (Huang and Zhao 2020). With the onset of the pandemic and the associated restrictions, people were unable to receive mental health services in a professional setting due to the risk of contracting the virus while visiting the hospital or a mental health clinic. These circumstances have directed attention to the use of telemedicine and digital mental health services in order to respond to the needs of people and provide timely treatment while minimising the risks of contagion. (Liu et al. 2020). Given the above cited background, the aim of this review is to highlight the role of telemental health services during the COVID-19 pandemic.

METHODS

Search Methods and Article Selection

This narrative review of the existing literature on remote mental health consultation or telemental services in the current COVID-19 pandemic has been registered within the PROSPERO database (CRD4202018088). The criteria for selecting the studies included the participants, the outcome(s) of interest, study design, context and the time period. These studies involved adults of >18 years who used telehealth interventions for mental well-being during the COVID-19 pandemic. The outcome was the utilization of telemental health services for managing mental health problems among adults during the COVID-19 pandemic. Published in English between January 01, 2020, till October 31, 2020, these studies were designed as randomized controlled trials, quasi-experimental, mixed-method, observational, and qualitative studies and studies that captured patient-specific remote service utilization for mental health ailments irrespective of the nationality. Case reports, systematic reviews, protocols, editorials, perspectives/opinions, commentaries and letters to the editor were excluded. Also, studies on telehealthservices for other chronic ailments such as cancer, chronic obstructive pulmonary disease, chronic kidney disease, hepatitis C, acquired immunodeficiency syndrome amongst others, were excluded.

An electronic search was carried out to explore the role of telehealth in improving mental health conditions among adults. The primary source of literature was the structured search of major electronic databases of the MEDLINE (PubMed), CINAHL Plus, Science Direct, and the Web of Science. The search terms were grouped in the categories of population (adults), intervention (telemental health, telepsychiatry, telehealth and remote consultation), outcome (utilization of telemental services), and time period (January 01- October 31, 2020). A thorough search of the databases was undertaken using the search terms “novel coronavirus”, “COVID-19”, “nCoV”, “remote mental health”, “telemental health”, “telepsychiatry”, “telehealth”, “online mental health”, “e-health service”, “remote psychiatry”, “online psychology”, “adults”, “males” and “females” in various permutations and combinations. Additionally, indexed keywords in the Medical Subject Headings (MeSH) was used in order to ensure uniform search terms.

RESULTS

Using the above-mentioned methods, a total of 1745 citations were retrieved, which, when reviewed, yielded 68 articles selected on title basis. From these, 48 articles were selected based on the abstracts. Finally, the full-texts of 30 articles were reviewed and 9 studies were included according to the eligibility criteria summarized in Figure 1. Since, given the nature of the selected studies, a formal systematic review or meta-analysis was not possible, a narrative review was composed by grouping the studies under the domain of telehealth applications using the methodological framework set out by Levac et al. (2010) based on the previous work of Arksey and O'Malley (2005). This approach gave our review the directive for identifying the relevant studies according to the research aim, selecting appropriate studies and then summarizing and reporting the main findings.

The review included the data of nine selected studies that used telemental health services among adults during the COVID-19 pandemic, two of which were from China (Yang et al. 2020, Bo et al. 2020), three from Australia (Kavoor et al. 2020, van Agteren et al. 2020, Staples et al. 2020) and one study from the four countries, namely, Spain (Goodman-Casanova et al. 2020), Austria (Probst et al. 2020) the U.S.A.-San Francisco (Barney et al. 2020) and the Dominican Republic(Peralta and Taveras 2020). The results are summarized in Table 1.

Utilization and Acceptance of Remote Telemental Health Services

The study by Kavoor et al. (2020) described the transition in the service delivery medium from face-to-face interviews to primarily telemedicine services in Australia, pointing out the

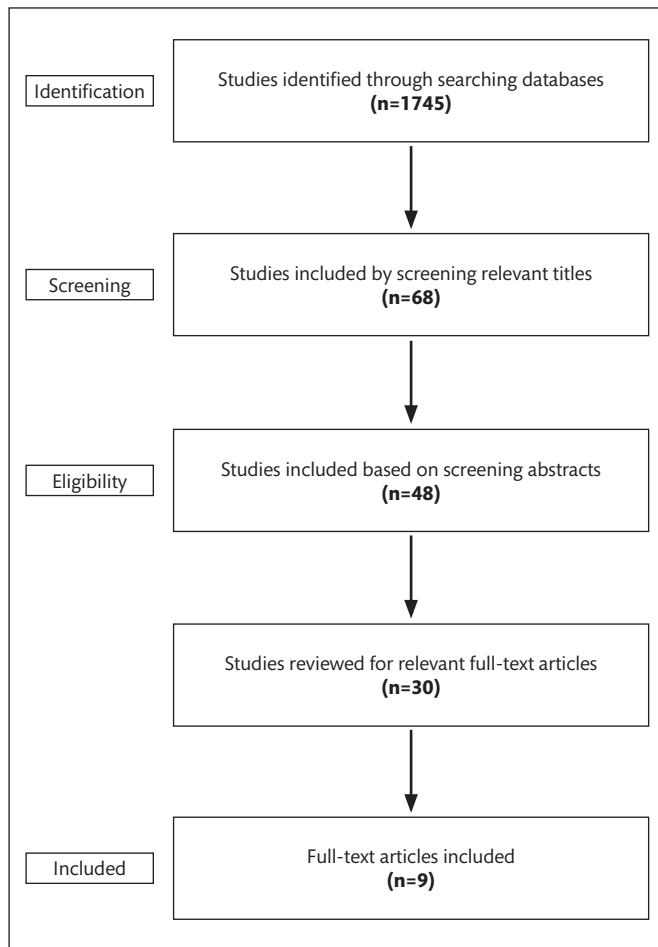


Figure 1. PRISMA Flow Diagram – Searching Databases for this Review

numerous changes applied in the existing mental health care system to deliver timely services to those most in need. All previously existing non-urgent appointments were conducted remotely over the telephone or by using telemedicine. Majority of the patients were satisfied with care consultation over distance that averted contracting COVID-19 from health care staff or by visiting the hospital in person. Overall, remote consultation was found to be a practical, feasible and viable model that facilitated the provision of quality care to the patients (Kavoor et al. 2020)

The study by Probst (2020) also concluded that patients in Austria preferred remote consultation as compared to face-to face clinic consultation, thus avoiding the risk of contagion. Results of the study evinced that the number of patients treated by personal contact decreased significantly while remote psychotherapy given either on the telephone ($p<0.001$) and the internet ($p<0.026$) increased dramatically during the early weeks of COVID-19 lockdown as compared to the months before the pandemic. Moreover, during the COVID-19 period, the health insurance companies in Austria initiated financial support for remote psychotherapy on the phone and the internet. The increased use of remote

services will certainly help the utilization of these services on the long-term and their integration to the existing health-care systems of Austria (Probst et al. 2020).

The University of California- San Francisco has offered audiovisual telemedicine service to adolescents and young adults in urban areas to reduce personal clinic visits during the COVID-19 pandemic. All physicians, fellows and nurses were trained to utilize audiovisual tools for telemedicine purposes. Daily sessions via telemedicine were initiated to provide mental health care services for the assessment of depression and anxiety and their management. Overall, health care providers pointed out that patients accepted and were satisfied with this health care service by remote contact (Barney et al. 2020).

Disease Management and Health Promotion

One of the studies from China determined that the 96.2% majority of COVID-19 patients suffered from substantial posttraumatic stress symptoms with the adverse outcomes including poor work performance and impaired quality of life. The same study also reported that 49.8% of the patients considered the COVID-19 related online mental health services such as psycho-educational materials, and psychological counseling very helpful to cope up with this crisis. Considering the detrimental effect of posttraumatic stress symptoms, the study suggested the initiation of remote mental health interventions along with long-term follow-up assessment for COVID-19 survivors (Bo et al. 2020).

The participants of one of the studies conducted in Australia were engaged with the health services delivered by the South Australian Health and Medical Research Institute (SAHMRI) Wellbeing and Resilience Centre. The center examined internet-based assessment of psychological well-being, and provided training for general psychological skills, to improve mental health of the community, which was witnessed to be significantly impaired during the COVID-19 pandemic. Access to internet-based services was believed to serve as an essential supplement for providing information on mental health services that provide timely care, by obviating the obstacles to access. (van Agteren et al. 2020).

The study by Yang et al.(2020) showed that active and passive counseling by telephone along with the customised written materials and interventions for psychological crises improved the psychometric anxiety and depression scores among adult patients. The study highlighted that comprehensive mental health intervention model was found to be effective for the participants.

The study from Spain has provided television-based assistive integrated technology called TV-AssistDem (Television-based Assistive Integrated Service) to assess physical and mental health effects of the pandemic on adults with mild cognitive

Table 1. Summary of the study results

S.No.	First author, year	Title of publication	Purpose of study	Method used for the study	Country of study	Study participants (n)	Health issue studied	Intervention	Key study outcomes
1.	Yang et al. 2020	Analysis of psychological state and clinical psychological intervention model of patients with COVID-19	The present study aimed to investigate and analyze the psychological status of patients with COVID-19 during the course of illness, and to evaluate the effect and influencing factors of psychological crisis intervention, so as to explore the effective mode of clinical psychological intervention in acute patients under isolation environment	Observational study design	China	A total of 143 persons participated in the study,	Mental health	Telephone psychological counseling (active and passive), self-adjustment of written materials and one-to-one psychological crisis intervention	After 1 week hospitalization with comprehensive psychological intervention, the scores of anxiety and depression in COVID-19 group were significantly decreased
2.	Probst et al. 2020	Changes in Provision of Psychotherapy in the Early Weeks of the COVID-19 Lockdown in Austria	To empirically evaluate changes in mental health care in times of COVID-19, the present study investigated how the provision of psychotherapy (personal contact, telephone, Internet) changed in the first weeks of the COVID-19 lockdown in Austria as compared to the months before	Retrospective study design	Austria	N = 1547	Mental health	Provision of psychotherapy (personal contact, telephone, Internet)	In COVID-19 lockdown: the number of patients treated on an average per week was lower with personal contact vs. telephone ($p < 0.001$) and vs. internet ($p < 0.026$). Moreover, the number of patients treated on an average per week was higher for telephone vs. internet ($p < 0.001$).
3.	Bo et al. 2020	Post traumatic stress symptoms and attitude toward crisis mental health services among clinically stable patients with COVID-19 in China	To examine the pattern of posttraumatic stress symptoms in clinically stable COVID-19 patients. They also explored patients' attitude towards crisis mental health services during the COVID-19 outbreak	Online assessment survey	China	730 COVID-19 patients	Mental Health	Online assessment was incorporated as part of crisis psychological interventions	Findings showed half of the participants (49.8%) to consider psycho-educational services helpful. During the COVID-19 outbreak, most crisis mental health services for infected patients were delivered online.
4.	Kavoor et al. 2020	Remote consultations in the era of COVID-19 pandemic: Preliminary experience in a regional Australian public acute mental health care setting	To describe the attributes of the participants that supported the initiation of the remote consultation.	Experience of switching mode of service delivery for mental health	Australia	Not mentioned	Maternal and Child Health (MCH)	All pre-existing non-urgent appointments were reviewed for clinical and risk parameters and then amended and conducted over the telephone with consent of the patient. Where feasible, reviews were done using tele-medicine to outreach areas	Overall, switching the mode of service delivery from face-to-face to tele-medicine, to a great extent was possible and enabled them to provide care and support to those who required it by minimizing the risk of exposure to patients

Continuation of Table 1

S.No.	First author, year	Title of publication	Purpose of study	Method used for the study	Country of study	Study participants (n)	Health issue studied	Intervention	Key study outcomes
5.	Goodman-Casanova et al., 2020	Telehealth Home Support During COVID-19 Confinement for Community-Dwelling Older Adults With Mild Cognitive Impairment or Mild Dementia: Survey Study	To explore the impact of confinement on the physical health and mental well-being of community-dwelling older adults with mild cognitive impairment or mild dementia, to provide television-based and telephone-based health and social support, and to study the effects of a television-based assistive integrated technology, TV-Assist Dem (Television-based Assistive Integrated Service to support European adults living with mild Dementia or mild cognitive impairment).	Telephone based survey to 93 participants in the TV-AssistDem clinical trial	Spain	93 participants	Mental health	Television-based telehealth support using TV-AssistDem service	Findings showed 39/93 (39%) of the respondents had contacted health and social services, while 29 (31%) requested information regarding these services during the telephone call. There were not any significant differences in health and well-being between the intervention and control groups. Respondents with TV-AssistDem performed more memory exercises (24/93, 52% vs 8/93, 17.4%; $P<.001$) than the control respondents. Television-based telehealth support using TV-AssistDem demonstrated potential for cognitive stimulation.
6.	Barney et al. May, 2020	The COVID-19 Pandemic and Rapid Implementation of Adolescent and Young Adult Telemedicine: Challenges and Opportunities for Innovation	This study reports on our clinic's rapid transition to audiovisual telemedicine without peripheral devices to decrease the number of in-person clinic visits in response to COVID-19, and describes novel observations, challenges, and opportunities for innovation.	Observations made due to implementation of telemedicine services	University of California San Francisco	Adolescent and Young Adult	Sexual/reproductive health, mental health & substance use	Telemedicine	Daily telemedicine sessions were held for urgent care, mental health (e.g. depression and anxiety assessments, medication management), eating disorder, and addiction treatment
7.	Agterren, et al. 2020	Using Internet-Based Psychological Measurement to Capture the Deteriorating Community Mental Health Profile During COVID-19: Observational Study	This study investigates the mental health outcomes of Australian community members accessing internet-based mental health assessment and psychological skills training during COVID-19 in comparison to cohorts of people engaged in these services prior to the pandemic.	Internet-based comparative cohort study	Australia	Adults N=2277	Mental health	Psychological skills training during COVID-19	The results clearly demonstrate deterioration in mental health outcomes during COVID-19. Although further research is needed, our findings support the serious mental health implications of the pandemic and highlight the utility of internet-based data collection tools in providing evidence to innovate and strengthen practice and policy during and after the pandemic

Continuation of Table 1

S.No.	First author, year	Title of publication	Purpose of study	Method used for the study	Country of study	Study participants (n)	Health issue studied	Intervention	Key study outcomes
8.	Peralta et al., 2020	Effectiveness of teleconsultation use in access to mental health services during the coronavirus disease 2019 pandemic in the Dominican Republic	This study aims to determine the effectiveness of teleconsultation use to increase access to mental health services, provided by volunteer staff during the quarantine of the COVID-19 pandemic in the Dominican Republic. Secondly, to describe psychological problems among the population receiving mental health services through teleconsultation in the Dominican Republic.	Secondary source data usage from March 25, 2020 to May 17, 2020	Dominican Republic	N=6204	Mental health	A special telephone service was enabled, organized by different governmental and private entities, in addition, it was published a list of telephone numbers of a team of volunteers consisting of 598 psychologists and seventy psychiatrists, who interacted from March 25 to May 17 with people who needed their help using calls, video calls, and electronic messaging services. After providing mental healthcare, each volunteer completed an online form to record relevant consultation data provided with a total of 6800 interventions to date	The result shows that nearly 67.3% of the interventions were requested by women. About 77.8% were adults between the ages of 18 and 59. 27.1% of the interventions were requested by people who worked as health personnel. Forty-six percent of the interventions were requested by people living in the province of Santo Domingo and 4.8% by people living outside the country. Of the interventions, 43% reported anxiety, 26%, sleep problems, 15%, depression, and 2% reported behaviors related to suicide.
9.	Staples et al., 2020	Rapid report 2: Symptoms of anxiety and depression during the first 12 weeks of the Coronavirus (COVID-19) pandemic in Australia	This study examined trends in service use and symptoms, over 12 weeks from 19 March to 10 June 2020.	Follow-up survey		n=5454	Mental health	MindSpot (www.mindspot.org.au) is a national digital mental health service (DMHS) funded by the Australian Department of Health to provide assessment and treatment to Australian adults with anxiety and depression	A total of 5455 people started a mental health assessment with MindSpot from 19 March to 10 June 2020. The number of assessments per week rose steadily from 303 in week 1 to a peak of 578 in week 5. Symptoms of anxiety were highest in Weeks 1–4, declining steadily over subsequent weeks. Psychological distress and depression, as measured by the K-10 and PHQ-9 respectively, remained stable. Concern about COVID-19 was highest in the first week then steadily declined during the following weeks. The proportions of participants reporting changes to routine were consistent across the 12 weeks, and most participants reported adopting helpful strategies to improve their mental wellbeing.

impairment or mild dementia. The participants of the intervention group were trained for using the TV-AssistDem and were provided regular access to health services in their home settings, while the participants of the control group received treatment as usual. Television sets offered access to COVID-19 information, provided recreational activities and performing memory exercises as an intellectual activity that served as a potential for cognitive stimulation. The study results indicated that the overall mental and physical health of the participating subjects were found to be optimal. Moreover, there were not significant differences in physical health and mental well-being between the two groups, but the participants on the TV-AssistDem had completed more memory exercises as compared to the control group (24/93, 52% vs 8/93, 17.4%; $P < .001$) (Goodman-Casanova et al. 2020).

The study carried out in the Dominican Republic determined the effectiveness of teleconsultation use to enhance provision of mental health services during the COVID-19 pandemic. A team of volunteers consisting of 598 psychologists and 70 psychiatrists interacted with the people needing their help by using calls, video calls, and electronic messaging services for a period of about two months. Implementation of the teleconsultation model was found to be effective by increasing access to mental healthcare and offering various interventions to the public during the COVID-19 pandemic (Peralta and Taveras 2020).

The study conducted by Staples et al (2020) at the MindSpot Clinics in Australia examined the trends in service demand, psychosocial stressors and symptoms of anxiety and depression during the first 12 weeks of the COVID-19 pandemic. The MindSpot Clinic is a nationwide digital mental health service (DMHS) that is sponsored by the Australian Government to offer psychological health services to community members experiencing anxiety and depression. Between March and June 2020, a total of 5455 individuals initiated a psychological health assessment at the MindSpot clinic. A drastic increase in the number of people seeking mental health service at the MindSpot clinic during COVID-19 period was witnessed. Whereas about 390 assessments per week were made before the pandemic, approximately 455 assessments per week were started during the twelve weeks of the COVID-19 pandemic. It was noted that symptoms of anxiety and concerns about COVID-19 contagion declined during the following weeks. A constant frequency of people reported variation in routine through the 12 weeks and the majority of participants stated that they adopted helpful strategies for improving their mental health (Staples et al. 2020).

DISCUSSION

The COVID-19 pandemic places a substantial burden on the psychological well-being of the people, resulting in a

higher demand for mental healthcare services. Hence, the telemental health services have become a fundamental tool in warranting the continuous provision of mental health care for communities. The current review provides evidence for the provision of mental care services by using telemental services during the COVID-19 pandemic. The role of telehealth identified in this review mainly focused on the applicability of this modality of assessing and managing various mental health outcomes in these unprecedented times. Although the evidence generated from this review is relatively low and is mostly reported from the developed world, valuable information is still provided with directives for all mental health specialists/experts to utilize telemental health services for the accessible and non-accessible communities, particularly during the pandemic.

Most of the studies analysed in this review examined COVID-19 related psychological symptoms among community members through the remote consultation services addressing their mental health needs (Yang et al. 2020, Bo et al. 2020, Goodman-Casanova et al. 2020, van Agteren et al. 2020). Few studies also demonstrated that remote psychological intervention have positive effects on patients diagnosed with COVID-19 (Yang et al. 2020, Barney et al. 2020). It was pointed out that the provision of telemental health support reduced the burden of mental health diseases and promoted the wellbeing of the individual (Yang et al. 2020, Goodman-Casanova et al. 2020, van Agteren et al. 2020). Also, it was witnessed that patients preferred remote consultation as compared to face-to-face visits to avoid contracting the virus and found remote psychotherapies and psychological counseling very helpful to cope with the crisis period (Bo et al. 2020, Kavoor et al. 2020, Probst et al. 2020, Barney et al. 2020). Staples et al. (2020) reported a notable increase in the number of individuals seeking online mental health care services during the pandemic as compared to the times before the pandemic. Hence, teleconsultation was identified to be an effective medium that facilitates timely access to mental healthcare services and provides a number of interventions for the community people during the COVID-19 pandemic (Peralta and Taveras 2020). The literature also includes reports that the provision of psychological health support particularly through telehealth modality will probably assist patients to maintain mental well-being and manage well with acute and post-acute health requirements in this outbreak (Zhou et al. 2020).

This innovative modality can be embedded within the existing health care system that can possibly cross the barrier of proximity and provide appropriate treatment to individuals that are in urgent need. Initial reports also reflected that individuals in isolation sought online services to address psychological needs which revealed community interest and acceptance for this mode of technology (Liu et al. 2020).

Further, the foremost advantage of escalating telemental health services without any limitations would certainly decrease face-to-face contact which in turn would lessen the risk of exposure of non-infected but susceptible individuals in the waiting areas of the clinics (Zhou et al. 2020).

Hence, telemental health services are found to be feasible and accessible for giving support to the community during this pandemic. The need for remote mental health services will certainly increase as the number of patients affected by COVID-19 continues to rise (Zhou et al. 2020). The long-term effects of COVID-19 on mental health requires rigorous efforts not just from the psychiatrists but from the healthcare system at large to inculcate innovative means for the benefit of the patients. Furthermore, there is need for using this modality in different countries, particularly in the developing countries where mental health infrastructure is poorly developed and the pandemic effect is likely to be more severe.

CONCLUSION

Briefly, the current COVID-19 pandemic with serious mental health repercussions of the lockdown, has changed the management of communal mental health diseases. Utilization of the innovative modality of telemental health mainly prevents transmission of infection and provides timely treatment to the community members most in need. There is further need for the adoption of remote mental healthcare facilities in different countries or settings in order to strengthen the practice and aid policy development during and after the global outbreak.

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