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Full Length Article

Management of psychiatric conditions and delirium during the COVID-19 pandemic across continents: lessons learned and recommendations

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ABSTRACT

Background: With the uncertainties of COVID-19, people infected with coronavirus present with diverse psychiatric presentations. Some institutions have had to manage their patients with existing protocols, others have had to create them. In this article we aimed to report the challenges and good practices in the management of psychiatric conditions and delirium coexisting with COVID-19 across continents.
Methods: Early Career Psychiatrists (ECPs) from across five continents were approached to share their experiences on the management of psychiatric conditions in patients with COVID-19 during the current pandemic.

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Results: We collected information about the experiences from sixteen countries. Commonalities were similar psychiatric presentations and poor preparedness across countries. Differences were varying adjustments made in the management of psychiatric conditions coexisting with COVID-19 and different innovations. Good practices which can be adopted by other countries are novel approaches such as telepsychiatry, proactive consultation-liaison units and enhanced community services targeted at circumventing challenges faced when providing mental health services.

Conclusions: These findings highlight the need for global preparedness in the mental health sector during outbreaks of infectious diseases, and the need for concerted efforts targeted at global and locally sensitive adaptation of existing protocols and the development of new guidelines for the management of psychiatric conditions for the present pandemic and subsequent occurrences.

1. Introduction

On December 31, 2019, the Chinese headquarters of the World Health Organization (WHO) were informed of some cases of pneumonia in the city of Wuhan, Hubei region (Zhu et al., 2020). The disease was subsequently associated with a potentially deadly novel coronavirus, also known as SARS-2019-nCoV, which causes Coronavirus disease 2019 (COVID-19) and its rapid spread around the world led to the declaration of COVID-19 as pandemic on March 11, 2020 (Chew et al., 2020; Elbay et al., 2020). The reported symptoms of COVID-19 are primarily respiratory with acute respiratory distress syndrome ultimately leading to dead in the most severe cases (Fu et al., 2020).

However SARS-CoV-2, both for its neurotropism (Troyer et al., 2020), and for the social consequences secondary to social distancing and the increasingly intense general lockdowns, can determine the aggravation or new onset of psychiatric disorders (Asadi-Pooya and Simani, 2020; Filatov et al., 2020; Nath, 2020; Vindegaard and Benros, 2020). Psychiatric symptoms may include posttraumatic stress disorder (PTSD), delirium, anxiety and depression among patients infected (Bojdani et al., 2020). Also, psychiatric symptoms of PTSD, burnout, depression and anxiety have been described among health care workers during the pandemic (Tsamakis et al., 2020; Walton et al., 2020).

The elusive nature of the SARS-CoV-2 virus, its infectivity rate, and its mode of transmission have boosted its continuous spread. Initial studies described it as a respiratory disease majorly affecting the lungs; however, more recent findings have pointed to COVID-19 as a multisystemic disease. The brain has also been reported as affected by the virus, directly and indirectly (Li et al., 2020). Early in the pandemic, physicians around the world were overwhelmed, and in some countries psychiatrists were redeployed to critical care units with focus on the management of respiratory-related conditions. However, increasing research shows that beyond physical conditions, COVID-19 is fraught with neuropsychiatric problems. This includes reported causes of delirium (Kotfis et al., 2020) in patients infected with the SARS-CoV-2 virus and the acute exacerbation of pre-existing mental health conditions (Xiang et al., 2020). A considerable number of patients with comorbid COVID-19 and psychiatric illnesses have been managed in isolation centers or specialized care units usually involving multidisciplinary teams. Some of these teams and facilities were ill-equipped to manage the acute phases of psychiatric complications of COVID-19 and the increasing cases of pre-existing psychiatric conditions.

2. Methods

The Early Career Psychiatrists (ECPs) Section is a formal arm of the World Psychiatric Association (WPA) which represents and supports psychiatric trainees and early career psychiatrists (up to seven years after completion of their training in psychiatry regardless of age) (Pereira-Sanchez et al., 2020; Pinto da Costa, 2020). One of the objectives of this WPA section is the professional development of early career psychiatrists through intersectional collaborations (Herrman, 2019; Schulze, 2018), thereby encouraging cross-cultural collaborations and international research projects. Amid the advent of the COVID-19 pandemic, ECP members who had established relationships from previous conferences, courses and training programs were contacted via *WhatsApp* and a group created through networking to brainstorm on COVID-19 related research topics and possible interventions. Group discussions were held via online messaging and conferencing platforms such as e-mails, *WhatsApp* and *Zoom*.

In the present study, twenty one early career psychiatrists (9 females and 12 males) from sixteen countries, comprising at least one from five of the seven continents (Africa, Asia, Europe, North America and South America) were informally approached by the lead (MIO) and co-lead (RdF) authors via *WhatsApp* and e-mails with an invitation to share insights and experiences about the challenges and good practices faced in the management of delirium and other psychiatric conditions manifesting in patients with COVID-19 and during the COVID-19 era.

2.1. First stage: setting up the team and the study rationale

This stage involved the evaluation of ongoing preventive and therapeutic approaches which revolved around the management of psychiatric conditions and delirium amid the COVID-19 era. The contributors in the study were requested by the lead and co-lead authors to share information from their country on these approaches such as: an overview of new and exacerbation of pre-existing cases of psychiatric conditions, existing and new infrastructures and resources, treatment utilized (pharmacologic and non-pharmacologic), new innovations and modifications of existing protocols which can be adopted for future implementation.

2.2. Second stage: synthesis and development of a conceptual model

The lead author and co-lead led the group discussion. A compilation of the contributions submitted by all the co-authors was reviewed and comprehensive appraisal of existing literature was applied. The literature review focused on identifying relevant existing information related to epidemiology, interventions, and recommendations. This information was synthesised and shared to a sub-set of the group (including the senior investigator) for further appraisal before sharing to all co-authors.

2.3. Third stage: management of psychiatric conditions and delirium during the COVID-19 pandemic

The revised synthesis was shared with all co-authors for comments, suggestions, and alterations. Thereafter, it was repeatedly adjusted based on consensus and comments. The modified delphi method, i.e. consensus decision making (>70% representative agreeable) was adopted for final inclusion.

3. Ethics

The present study did not require ethical approval from local institutional ethical committees.

4. Results

The reality of sixteen countries has been described by Early Career

Psychiatrists, who have been conducting research on the impact of CODIV-19 with the support of the Early Career Psychiatrists Section of the World Psychiatric Association.

5. Country-specific insights

5.1. Germany

In Germany, exacerbation of mental health disorders during COVID-19 pandemic has been reported. Particularly alcohol and drug abuse, leading to domestic violence, anxiety problems among mentally ill patients as well as the presence of hallucinations were reported (Fatke et al., 2020). Also, cases of 'cyberchondria' (i.e., disproportionate concerns about one's health as a result of reading contents related to health online), difficulties with emotional regulation resulting from personal crises (i.e., job loss, illness, death of loved ones) were observed in the general population. Likewise, a positive correlation between cyberchondria and generalised anxiety occurring during periods of virus outbreaks was observed (Jungmann and Witthöft, 2020). The restrictive rules of quarantine made it difficult for many patients to get proper outpatient mental health care. The limited access to appointments with psychologists, psychiatrists, and other professionals, as well as the need for a transition to virtual psychotherapy were serious challenges for many patients. It was particularly worrying for many senior citizens due to their limited digital literacy. Further worsened by the inability of family members to assist, as the laid down recommendations prevented them from visiting their elderly ones during the quarantine.

Imposed restrictions was one of the main issues among mental health sector faced during the present pandemic in Germany (Thome et al., 2020). The cases of anxiety among mentally ill patients suspected to have been infected with the virus while on hospital admission were observed. The isolation of suspected COVID-19 cases as well as the transfers to internal units were serious challenges for the residents of psychiatric hospitals. Liaison Psychiatry faced a new challenge with the treatment of infected psychiatric patients in intensive care units. This supports evidence that the occurrence of acute psychiatric conditions requires an accurate multidisciplinary approach during pandemics (Mukherjee et al., 2020).

5.2. India

In India, the lockdown measures imposed by authorities prevented access to psychiatric treatment in the face of the COVID-19 pandemic. During the lockdown, private psychiatric outpatient departments and inpatient services were closed, except for emergency services. The outpatient departments (OPD) in the government hospital were also affected with a smaller number of patients visiting hospitals (Mukherjee et al., 2020). Although the government in India has taken proactive measures towards the psychological distress among the public, the preparation and planning in the mental health sector for the pandemic was lacking. In addition, India has a huge shortage of mental health professionals, which could affect the delivery of mental health services and may widen the treatment gap for mental disorders (R. S. Ransing et al., 2020).

The Indian Government announced a countrywide lockdown on March 24, 2020 for 3 weeks initially and later for another 4 and half weeks to slow down the transmission of COVID-19 disease (Pulla, 2020).

However, the Indian Psychiatric Society (IPS) considered the impact on the psychological and emotional health and released a position statement on March 30, 2020. The statement recognized community's needs during this pandemic, promoting the transfer of the center of care from the clinics to the communities, and advocated for the use of available information technology to 'reach the unreached' via online consultation with psychiatrists. Due to sudden non-availability of alcohol or opioid distribution, the abrupt rise in patients with SUD (mainly alcohol) related disorders (e.g. withdrawal) was observed. There has been an increase in suicide due to COVID-19 (Shoib et al., 2020). Considering the potentials of increased relapse of illness when psychotropic medications are not available to patients due to the inability to renew their prescriptions, the IPS asked that norms be relaxed so that patients can get their refills with an old prescription or through online prescriptions till the crisis is over. The various State branches under the aegis of the IPS have made available a list of over 650 psychiatrists who have volunteered to meet the needs of the affected population. According to a survey conducted by the IPS, within a week of the start of the nationwide lockdown in India itself, the number of reported cases of mental illness in the country had risen by 20% ("Indian Psychiatric Society: Position Statement on COVID-19 Pandemic, Mental Health Issues | Indian Psychiatric Society," n.d.).

5.3. Iran

Based on the National Health Service (NHS) and previous national guidelines, an Iranian version of the guideline for the management of patients with delirium and COVID-19 has been recently proposed (unpublished) by psychiatrists of the Roozbeh Hospital, Tehran, the main referral psychiatric center in Iran (Arbabi et al., 2018; Birmingham, 2020). Both the pharmacological management and the non-pharmacological approaches for the Iranian guidelines are in line with what is reported by similar international organizations, and the main indications are summarized in Tables 1 and 2.

Presently in Iran, psychiatric patients have access to teleconsultation through 24/7 hotline numbers. Additionally, they can access online psychological interventions regularly and do not need to visit their therapists in person in the era of the COVID-19 pandemic. Furthermore, electronic prescription services have been recently developed in the health care system of Iran. For individuals with mild forms of mental health problems such as mild anxiety, depression, and dementia, activities such as meditation, group physical practice, relaxation, and social interactions using social media applications, and video-call technology may improve the mental and physical health and prevent loneliness (Padala et al., 2020). However, some patients have a number of limitations in using these technologies, such as fear and lack of familiarity. Besides, hearing and vision impairment or loss may reduce the effectiveness of these methods.

Table 1
Prophylaxis of delirium (Zoremba, 2017).

1. Maintaining patient's sensory connection with the world and sense of orientation	Patient should use their personal belongings – such as their own hearing aids and glasses, any unnecessary change should be avoided as much as possible, such as room changes or changes in therapy time. Current newspapers, clearly visible clocks and calendars should be available in patients' rooms.
2 Ensuring a high level of personnel continuity	It is of extreme importance for the dementia patients, to establish a strong sense of connection thus ensuring the feeling of security.
3 Keeping patient's connection with loved ones	Encouraging to the extent possible, patient's interaction with their loved ones (with a familiar caregiver) and/or telecommunication promotes their wellbeing. Healthcare professionals should encourage these efforts in patients who are capable. Many patients would also benefit from having pictures of their loved ones readily on sight.
4 Ensuring patient's comfort	Reduction of negative stimuli (e.g. unnecessary noise, extreme temperatures) and managing underlying health conditions (e.g. acute infections, risk factors).

Table 2
Treatment of delirium.

Typical antipsychotic medication	Oral haloperidol: Start 1–2 mg is started and plan dose increase Older patients: start 0.25–0.5 mg and plan increasing the dose Parenteral haloperidol: Mild agitation: 2 mg Medium agitation: 5 mg Heavy agitation: 10 mg Elderly patient: 0.5 mg ***Fast and bolus IV administrations can cause fatal cardiac problems. Monitoring of vital functions is recommended.
Atypical antipsychotic medication	The recommended doses are: quetiapine 6.25–50 mg, olanzapine 2.5–5 mg and risperidone 0.5–2 mg
Other medication used	Dexmedetodimine (for ICU patients))0.4 μg/kg/h Tiapride: hyperkinetic delirium Lopinavir/ritonavir:50–300 mg in 24 h Promazine

Antipsychotics: One of the challenges in the use and prescription of antipsychotics is the variety of potential adverse effect. They may increase the risk of cerebrovascular incidents especially in patients with pre-existing cognitive impairments such as dementia, and the extrapyramidal and anticholinergic effects (Rao et al., 2016). Comparing second generation antipsychotics, anticholinergic effects are more prevalent with olanzapine (Gardner, 2005). In COVID-19 patients, the risk of cardiac effects is of concern when antipsychotics are used in combination with antivirals or azithromycin. Olanzapine has favorable profile in comparison to other antipsychotics like risperidone, haloperidol and quetiapine, when prescribing with antiviral or already on antiviral. On the other hand, haloperidol can be used in intravenous dose lower than 2 mg as it have rare cardiac effect unless there is risk for QT prolongation (Meyer-Massetti et al., 2010).

For the management of agitation due to potential sensitivity to EPS (extrapyramidal side effect), low potency antipsychotic such as olanzapine, quetiapine and chlorpromazine may be preferred. Haloperidol should be used cautiously due to risk of extrapyramidal effects, and QT prolongation in patient on azithromycin or hydroxychloroquine for COVID-19 management. IV and IM forms of chlorpromazine may also be particularly effective in patients exhibiting withdrawal who stop taking pills by mouth (Beach et al., 2020).

Benzodiazepines: They have the potential of adverse effects causing respiratory depression and should be avoided in delirium patients infected with COVID-19 (LaHue et al., 2020). They can be used in those who had seizures withdrawal symptoms, patients who cannot tolerate antipsychotics or where their use is discouraged or contraindicated (e.g. Parkinson's disease or Lewy Body Dementia). Benzodiazepine withdrawal-induced delirium can occur, so patients who were recently on benzodiazepines should be kept on low doses. Benzodiazepines may increase risk for delirium in critically ill COVID-19 patients, so alternative to benzodiazepine for sedation should be used in COVID-19 patient (Khawam et al., 2020).

Clonidine, an alpha-2 agonist can be used for agitation in COVID-19 patient in ICU because of easy use and minimal side effect (Beach et al., 2020).

5.4. Kosovo

With the COVID-19 emergency, the Kosovo Ministry of Health and associated medical bodies imposed the limitation of outpatient visits, allowing the possibility of carrying out only urgent outpatient visits. Mental health providers in Kosovo remain constantly vigilant as to the developing threat of COVID-19 especially, as psychiatric patients form a vulnerable group within which this virus could have dire consequences. Patients with serious mental illness such as schizophrenia and individuals who are homeless are especially likely to suffer from the pandemic, being at risk for COVID-19, as their cognitive difficulties and marginalized social status may impair their ability to follow public health prescriptions intended to minimize spread of the infection.

Telepsychiatry via video conferences and other online tools, including clinician-guided self-help or pure self-help cognitive-behavioral therapy, were beneficial for individuals with low and moderate symptom severity. In Kosovo, during the COVID-19 pandemic, telepsychiatry was particularly present with the iFightDepression website, an EU-funded project hosted by the Kosovo Community Mental Health Centers as public institutions, based on the principle of Cognitive Behavioral Therapy, versions for youth and adults, free to use, with support from a trained mental health professional, with sufficient confidentiality (Ramalho et al., 2020; Schuh Teixeira et al., 2020; "Start - iFightDepression [SQ]," n.d.).

Multidisciplinary mental health teams established by health authorities at regional and national levels (including psychiatrists, psychiatric nurses, clinical psychologists, psychosocial counsellors and other mental health workers) provided mental health support for patients, with existing protocols. Psychiatrists may be asked to consult patients receiving pharmacotherapy for COVID-19 and should therefore be familiar with some of the medications currently being used and psychiatric side effects such as mood and anxiety disturbances, insomnia, and more rarely, psychosis. Patients should be asked about any other prescribed medications or supplements they may be taking in the belief it may reduce their susceptibility to COVID-19 infection.

Currently, there are no guidelines for the treatment of COVID-19 related psychiatric conditions. National Institute Public Health of Kosovo published a manual for COVID-19 prevention and control with recommendations for minimizing COVID-19 spread, making recommendations on mitigation steps to reduce community transmission of COVID-19, such as restricting visitors, adjusting standards of care, changing elective procedures, and establishing cohort units, among others (Kosovës, n.d.). However, no specific therapeutic protocol for COVID-19 exists in Kosovo, valid international guidelines are needed to improve the delivery of mental health services as it is imperative that these services must be provided during the COVID-19 pandemic.

5.5. Lebanon

The first reported case of COVID-19 in Lebanon was in February 2020. These are unprecedented times for the health system but more so for the psychiatric provider. The health system in Lebanon is one of the few in the Middle East that does not have a mental health policy addressing issues like the poorly financed mental health services despite its tremendous burden of mental illnesses in the country (Kudva et al., 2020; R. Ransing et al., 2020). With the COVID-19 pandemic, mental health was treated as priority (Khoury et al., 2020) and a National Mental Health Program was initiated in Lebanon. However, some centers relocated their psychiatric inpatient unit to smaller units (with limited bed spaces) in the main hospital to create space for the Pandemic Evaluation Clinic and Center. With the pandemic, bed spaces for psychiatric cases became scarcer and almost unavailable for acute cases requiring seclusion. Some other psychiatric hospitals stopped accepting new cases. Taking into cognizance the existing overcrowded psychiatric wards, a cause of concern for most psychiatrists in Lebanon was managing the comorbidity of COVID-19 infection in severe mentally ill patients. Common mental disorders cases treated have been stress-related conditions, anxiety, mood disorders, and insomnia. In parallel, a rapid tele-deployment was instituted in emergency settings likewise, the launch of telepsychiatry consultations to our patients over several months. Of the many hurdles that came with transiting to a digital platform, one has been getting patients to fill their prescriptions as the system in Lebanon does not have a unified electronic health care record.

In view of the possibility of a high risk of relapse due to multiple stressors in patients with pre-existing psychiatric conditions, a proactive consultation-liaison model, rather than a reactive one whereby all patients presenting for testing or admission to the COVID-19 unit were screened for depression and anxiety and offered free services. This model can be replicated in times of future crises. One of the challenges faced was managing admitted COVID-19 patients. However, the bulk of our consults were done via phone conversations with patients and staff, as the provision of other electronic gadgets needed to implement more advanced forms of telepsychiatry were not approved. Alternatively, our experience of delirium mirrors that reported globally (Beach et al., 2020; Meagher et al., 2020). Another challenge faced is the resistance from medical teams in initiating antipsychotics for agitated delirium. Lebanon has included hydroxychloroquine as part of the regimen used for COVID-19 patients in the ICU. However, more research may be required to evaluate the success of this regimen.

5.6. Nigeria

Cases of delirium have not been observed as a common manifestation of patients infected with COVID-19, except for a few cases reported in the elderly and they were mostly managed with low dose haloperidol and other guidelines stated by the National Institute of Clinical Excellence (NICE) ("Overview | Delirium: prevention, diagnosis and management | Guidance | NICE," n.d.). The management of delirium in Nigeria has been guided by international protocols. Due to the peculiarities of COVID-19 being easily transmissible; the loneliness that ensues in isolation centers; the absence of family or caregivers; the limitations of Personal Protective Equipment (PPE) and inadequate representation of neuropsychiatrists in the COVID 19 management teams, adjustments have been made to the non-pharmacologic interventions of managing delirium. Likewise, several adjustments have been made to the management of pre-existing psychiatric conditions in people infected with COVID-19, such as measures that reduce the risk of frequent contact between patients and healthcare providers. Informal reports from colleagues around Nigeria indicate some degree of modifications to the delivery of psychiatric care in many of the institutions around the country such as the use of long-acting injectable antipsychotics (LAI) which is increasingly utilized to ensure the stability of patients. As at July 2020, there were no documented reports on the modifications of or guidelines for the management of delirium and pre-existing psychiatric comorbidity with COVID-19 infection.

The COVID-19 pandemic has also led to a surge in new cases of psychiatric conditions and exacerbation of pre-existing psychiatric illnesses, presenting with a myriad of symptoms of psychological distress, anxiety, panic attacks, obsessive-compulsive disorder (OCD), depression, PTSD, psychotic symptoms and substance use related problems like withdrawal. Some of these new cases are a sequel to positive COVID-19 tests and quarantine. Likewise, Nigerians are experiencing more cases of secondary consequences of the pandemic such as intimate partner violence (IPV), rape and suicide. Sequel to the national lockdown and social distancing measures, some patients with underlying psychiatric disorders have experienced less social support, reduced or no access to medications with attendant exacerbation of symptoms. Many specialist clinics suspended services, attending only to emergency cases. Liaison psychiatric services in the community and in special populations such as prisons also suspended activities. These changes have a remarkably negative impact on the mental health care of the Nigerian populace, the magnitude of which will only be evident with time and proper, evidence-based reporting. To circumvent these challenges, the use of LAI, extended follow up visits and teleconsultation via telephone calls and videoconferencing have been employed (although, a great number of patients cannot access telepsychiatry on account of limited reach and affordability). The dearth of published literature on the management of such neuropsychiatric conditions in Nigeria is a major issue of concern as special considerations have been instituted during the pandemic and without adequate scientific data available, management of delirium and other psychiatric conditions may be inconsistent and lack scientific rigor in the country.

5.7. Thailand

As at July 2020, no new case has been reported for almost a month in Thailand, a country which had 3126 documented COVID-19 infected patients with 58 deaths and 51 cases who were managed as inpatients ("COVID-19 and Mental Health," n.d.). The Department of Disease Control of the Ministry of Public Health in Thailand has played an important role in controlling the pandemic of COVID-19. Great efforts were employed to promote mental health among the Thai population thereby decreasing the general public's anxieties and encouraging preparations geared at coping strategies for the upcoming "new normal" era ("COVID-19 and Mental Health," n.d.). However, it seems that a great part of these efforts focused more on curbing the spread and reduction of the number of cases and deaths. Also, there is the absence of precise guidelines or expert advice from professional organizations or individuals suggested for the management of psychiatric conditions in COVID-19 patients, including delirious conditions ("The Royal College of Psychiatrists of Thailand," n.d.). Regardless, the consultation systems from cohort wards in general hospitals have been operating using previous guidelines in accordance with the recommendations of American Psychiatric Association (APA) ("Serious Mental Illness and COVID-19: Tailoring ACT Teams, Group Homes, and Supportive Housing," n.d.).

In line with the lockdown policy during the state of emergency, many general hospitals have had to cancel several "non-urgent" patients' appointments, of which most psychiatric outpatients were categorized ("State of emergency extended," n.d.). Most of the psychiatric conditions which presented at the Thai hospitals at the peak of pandemic were emergency cases such as acute mania and severe psychosis usually precipitated by the abstinence from psychotropic medications, other common cases were anxiety, depression, and insomnia (Jatchavala, 2013). The Thai village health volunteers have played important roles, not only for COVID-19 patients but in providing healthcare generally. One of the volunteers' responsibilities include delivering psychotropic drugs and relapse surveillance for psychiatric patients within some specified areas ("Thailand's one million health volunteers hailed as coronavirus heroes: Thai Health Promotion Foundation - The sustainabillty of well-being for Thai people," n.d.). According to records, delirium was not commonly seen among COVID-19 infected patients in Thailand. However, there are no nationwide systematic data collection of delirium. Contrarily, Thai currently battles cases of delirium tremens following alcohol withdrawal (and COVID-19) for at least three months from July, in line with the Thai Buddhist lent, which requires an "alcohol-free" state (Saengow, 2019). There still exists a large gap of practical knowledge of psychiatry practice during a pandemic in Thailand and there is a need for more research to guide preparations for action plans for subsequent occurrences.

5.8. Tunisia

Tunisia is one of the countries least affected by the COVID-19 pandemic. The first COVID-19 case was detected March 2, 2020, and as at July 15, 2020, there were 1327 cases and 50 deaths. The mental health sector was barely affected by the pandemic as no psychiatric complication of COVID-19 was reported and no patient with COVID-19 was hospitalized in psychiatric units either. General preventive measures are imposed in all mental health care facilities. Patients as well as doctors were obliged to wear at least surgical flaps during interviews and in the hospital. Telepsychiatry platforms were implemented to minimize the number of hospital visits. A protocol was established to serve as a guide on patients with COVID-19 who will require consultation or will be hospitalized. Patients suspected to have COVID-19 were hospitalized in a separate ward (specially designed for them) where all necessary PPEs were made available for the medical staff.

A toll-free hotline was also established by the ministry of health in order to respond to the concerns of people in relation to widespread anxiety and to prevent development of more serious psychiatric conditions like PTSD. As there are no psychiatric patients with COVID-19 yet, no specific therapeutic protocol has been established.

5.9. Turkey

The Turkish Ministry of Health and associated medical bodies have developed documents on the mitigation, management and treatment of COVID-19 infection ("Yeni Koronavirüs Hastalığı (COVID-19)," n.d.). However, there seems to be an absence of official guidelines on the management of neuropsychiatric symptoms or delirium in patients with COVID-19. Task Forces of the Psychiatric Association of Turkey (PAT) have developed several guidance documents for mental health professionals and individuals to manage their previous existing psychiatric

disorders (European Psychiatric Association, n.d.). According to the recommendations developed by PAT on delirium and COVID-19 factors to take into cognizance when managing cases of delirium co-occurring with COVID-19 include: 1) respiratory problems, especially the presence of hypoxia; 2) fever; 3) metabolic disorders; 4) nutritional disorders and dehydration; 5) side effects/interactions of drugs. Likewise, the treatment of the underlying medical or surgical problem is important in the management of delirium. Antipsychotic drug use has been considered for symptomatic control, especially agitation. Lopinavir/ritonavir, because of their strong CYP3A4 inhibition, are not recommended to be used along with quetiapine, as it poses serious risk of toxicity. It should be noted that since they inhibit CYP 2D6, ritonavir and hydroxychloroquine should be used cautiously, as they may increase the risk of QT prolongation when used along with haloperidol. In the management of delirium, typical and atypical antipsychotics are recommended. The advantages of typical antipsychotics such as haloperidol are the availability of different forms of administration (oral, intramuscular and intravenous). Disadvantages are possible extrapyramidal side effects and cardiac (QT prolongation) side effects. On the other hand, atypical antipsychotics (quetiapine, olanzapine, risperidone) may also be used though they present disadvantages such as anticholinergic side effects, cognitive deterioration, constipation, difficulty in urinating and cardiac problems (Türkiye Psikiyatri Derneği Konsültasyon Liyezon Psikiyatrisi Çalışma Birimi tarafından hazırlanmıştır., n.d.) (Table 2).

5.10. United States of America

As the number of cases in the United States continues to rise exponentially daily, the magnitude of COVID-19 as a public health emergency becomes more profound. Affecting the health, safety, and well-being of both individuals (leading to emotional isolation, etc.) and communities (owing to job loss and furloughs, school closures, limited resources for medical response, etc.), these effects can have a significant impact on individuals' mental health leading to relapses on substance use, depression, and medication non-compliance. As the United States continues to learn to cope with this pandemic, interventions that have been learned in previous pandemics of SARS, MERS, and Ebola are implemented. PFA is an early intervention that targets affected survivors during this outbreak. Several PFA frameworks and models are currently being used including John Hopkins's PFA tool (Shah et al., 2020). The use of LAI was continued in some centers for patients with schizophrenia who were stabilized on LAI. Outpatients were screened for COVID-19 prior to administration of the LAI, thereafter telepsychiatry was instituted for further care. In some centers, to reduce the risk of transmission and conserve PPEs, many patients with schizophrenia who responded well with LAI were not given their monthly injection as it was considered an elective procedure ("Coronavirus disease 2019 (COVID-19): Psychiatric illness - UpToDate," n.d.). However, APA reiterated the importance of LAI and considered it an essential procedure as it can lead to significant decompensation of their psychiatric illnesses. Daily home visits are currently being considered as a reasonable alternative to inpatient hospitalization for patients with mild to moderate symptoms ("Coronavirus disease 2019 (COVID-19): Psychiatric illness - UpToDate," n.d.). Patients who require inpatient hospitalization are being screened for COVID-19 with nasopharyngeal swab before being admitted to inpatient units. Electroconvulsive therapy is being performed by a minimum number of clinicians required (including treating psychiatrists, anesthesiologist, and a nurse). Interventions for managing suicidal ideations and behaviors include telehealth or in-person visits depending on the situation.

The management of delirium of COVID-19 in the USA continues to consume hospital resources and prevention strategies for delirium may become an unintended casualty of uncommon resource and personnel apportionment (LaHue et al., 2020). Delirium could present as an early symptom of infection in septic patients. Therefore, early and regular screening of delirium using validated screening tools such as CAM-ICU or ICDSC are recommended. However, this may not always be feasible as routine practice of delirium monitoring poses a huge burden on the managing personnel (Marra et al., 2019). Approximately 90% of COVID-19 patients whose condition required admission to the intensive care unit (ICU) needed mechanical ventilation (Katarzyna Kotfis et al., 2020). In the past, delirium rates within mechanically ventilated ICU patients were around 70–75% (Katarzyna Kotfis et al., 2020). In light of this pandemic, we may be able to reduce it via lighter sedation and mobilization using the implementation of the safety bundle called the ABCDEFs endorsed by Society of Critical Care Medicine (SCCM).

Several modifications have been made to the current ABCDEF delirium management guidelines as suggested by several authors and some of them include the following (Devlin et al., 2020; LaHue et al., 2020): **A**ssessment/treatment of pain-better coordination between RNs and other clinicians in the use of non-verbal pain assessments for bedside care, the use of behavioral pain assessment tools (Behavioral pain score, CPOT), the treatment of pain presumptively even when it appears to be absent, regular pain assessment in the prone position and provision of adequate pain management. **B**oth Spontaneous Awakening Trials (SAT) and Spontaneous Breathing Trials (SBT) regularly assess patients these trials (LaHue et al., 2020). Daily SBT safety screen regardless of perceived SBT success, engaging the assistance of other clinicians to provide bedside care to bedside assessments in the absence of the RN. **C**hoices of sedation-several strategizes to optimize analgesic, sedative, and NMB use and decrease safety concerns are being introduced. Such as adjusting sedation to ventilation needs, discontinue potent sedative or use agents that don't suppress respiration such as antipsychotics and alpha-2 agonists (Katarzyna Kotfis et al., 2020). **D**elirium-provide regular delirium screening (CAM-ICU, ICDSC), usual non-pharmacological interventions: such as orientation is a priority because patients are seeing their providers in personal protective equipment; support for senses (hearing aids/glasses); monitor taste/smell; limit use of CNS-active medications to agitated patients. **E**arly mobility- One major problem faced by critically ill patients with COVID-19 is the reduced time nurses are at the patient's bedside have to perform in-bed rehabilitation efforts as physical and occupational therapists may not be present in the ICU. This can be addressed using virtual consultations such as passive physiotherapy interventions, mask extubated ICU patients to facilitate hallway walking. **F**amily presence- orientate both patients and family regularly, provide phone conversations and video conferences, and tele-medicine tools; provide visual and vocal contact with the family/caregivers/friends, especially for all dying patients despite isolation, lack of time, and heavy workload (Devlin et al., 2020; K Kotfis et al., 2020; Katarzyna Kotfis et al., 2020; LaHue et al., 2020).

6. Lessons across countries and general recommendations

One of the many lessons learned is that the practice of psychiatry is changing, and new innovations must be embraced to enable service delivery to the populations they serve (Tables 3 and 4). Hence, the use of telepsychiatry and electronic prescriptions becomes a vital tool to be implemented globally. In assessing patients in an era where physical distancing is advocated, there is a need to inquire about COVID-19 related stressors (e.g. exposure to infection, infected family members, and social isolation), other challenges (such as job loss), and psychosocial effects (e.g. depression, psychosomatic preoccupations, anxiety, increased substance use, domestic violence, and physical abuse in children and elderly) (Zoremba, 2017). Some patients may require a full psychiatric evaluation and treatment (in cases of substance withdrawal, in-person consultations are better for patients' and medical teams' anxieties), others would benefit from supportive interventions (such as coping techniques, psychoeducation), whereas, some may only need information and reassurance (Table 3).

Another lesson learned is the need for proactive consultation-liaison teams and the importance of the "Liaison" in our "Consultation-Liaison" units. We, therefore, recommend the continuous need to train other team members on the basics of delirium and its management.

Table 3
Similarities and differences across countries.

Similarities across countries	Differences
Imposition of lockdown measures across the countries, especially in the early days of the lockdown	Some countries suspended community mental health care in the early phase of the pandemic (i.e. Nigeria)
Resultant limited access to mental health care services, except emergencies	Few countries have the additional burden of shortage of mental health professional (i.e., India and Nigeria)
Increase in new cases and exacerbations of pre-existing psychiatric conditions	
Senior citizens were recognized as a high-risk group for delirium	Delirium was not reported as a common finding across most countries in this study (i.e. Germany, India, Kosovo, Lebanon, Nigeria, Thailand, and Tunisia)
Across countries, there were varying degrees of lack of preparedness in the mental health sector for infectious diseases.	Few countries (Iran, USA, Turkey and Thailand) have developed some guidelines and protocols for the management of psychiatric conditions in periods of infectious disease outbreaks
Adjustments were made to the existing management of delirium and other psychiatric conditions (i.e., pharmacologic and non-pharmacologic measures)	Variance in the existing management for patients with delirium with COVID-19 infection
New challenges for consultation/liaison teams were identified in the care of patients with comorbidities	
All countries implemented forms of teleconsultation services	
Multidisciplinary approaches were identified	

Table 4
Lessons and recommendations.

Lessons	Recommendations
The practice of psychiatry is dynamic, therefore novel innovations were actuated and implemented to enhance service delivery.	The implementation of telepsychiatry and enabling mechanisms which will ensure its seamless utilization globally.
The need for proactive consultation-liaison teams and the importance of the "Liaison" component in "Consultation-Liaison" units.	The constant need to educate other non-psychiatrist practitioners on the management of delirium and other psychiatric conditions co-existing with COVID-19 and other medical or surgical conditions. To the extent possible, earmark wards for patients with acute mental illness presentations co-existing with other medical conditions.
Especially in the Low-and-Middle-Income Countries (LMIC), community health workers and trained volunteers are pivotal in reducing the existing treatment gap even in periods of infectious disease outbreaks.	The promotion and empowerment of community-based mental health services. Improved trainings of community health workers and trained volunteers through linkage, enhancement or mixed models.
The management of psychiatric conditions coexisting with and occurring during infectious disease outbreaks may become a common occurrence. Consequently, countries should demonstrate increasing levels of preparedness for the present and subsequent outbreaks.	There is a dire need to develop protocols and guidelines for the management of psychiatric conditions during infectious disease outbreaks, both locally and globally.

Psychiatrists and COVID-19 teams should become familiar with medication interactions and side effect profiles of psychotropics and other medications used in COVID-19 treatment. It may therefore be necessary at national and institutional levels to design and designate some rooms on the general hospital wards for patients with acute mental illness presentations co-existing with other medical conditions.

Prompt and appropriate mental health care should be available to COVID-19 patients with comorbid mental disorders. Safe services should be set up to provide psychological counselling using electronic devices and applications, such as smartphone apps for the affected patients and their families to decrease isolation.

One other lesson, particularly for low- and middle-income countries is the need to enable community-based mental health services. The role of community health workers and trained volunteers is pivotal in reducing the existing mental health gap as they can help to institute care and promote activities in the communities geared at preventing relapse in patients.

Finally, the mental health sector should use the lessons from this pandemic to develop protocols and guidelines for the management of psychiatric conditions in periods of infectious disease outbreaks to increase their level of preparedness globally (Table 4).

7. Conclusions

This overview highlights ECPs' experiences and lessons learned across 10 countries in five continents' in the management of delirium and other psychiatric conditions in the context of COVID-19 pandemic. It demonstrates the apparent lack of preparedness for a disease of such magnitude and its impact on psychiatric conditions across countries in the present study. Noteworthy were the adjustments that have been made to existing models of mental health care delivery in view of the present pandemic. It is therefore hoped that these lessons will inform strategies for the adaptation of existing protocols and development of new guidelines for the management of psychiatric conditions targeted at improving mental health care particularly with the emergence and re-emergence of infectious diseases.

Table 1 shows four dimensions of measures for the prophylaxis of delirium in hospitalized patients with COVID-19, especially for those in the Intensive Care Unit (ICU).

Table 2 describes some medications used in our centers and the challenges of their side effect/drug interactions.

Table 3 shows the similarities and differences in the management of delirium in patients with COVID-19 and other psychiatric condition during the present pandemic across 10 countries.

Table 4 outlines the lessons learned and some recommendations that can be adopted by countries across continents.

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MIO and RdF lead the group discussion and manuscript drafting. MIO, RdF, AT, RR, VPS and MPDC reviewed the manuscript. All the authors agreed on the final draft before submission.

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The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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