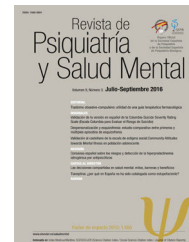




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SPECIAL ARTICLE

Psychiatry in the aftermath of COVID-19

La psiquiatría post-COVID-19



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At the time of the writing of this article, a substantial part of the world population is in partial or total lockdown due to the pandemic caused by the SARS CoV-2 virus. This health emergency, which has hit our country of Spain hard, has transformed and will continue to transform our social customs, our economy, and, obviously, our health care system in ways that are difficult to predict. This article aims to anticipate some of the changes that are coming in the field of mental health and care for people with mental disorders, as well as the specialty that deals with it: psychiatry. Psychiatry, in its broad sense, also includes aspects of medical psychology and prevention and health promotion that are undoubtedly part of the specialty's doctrine.

Psychiatry as a medical specialty

Many psychiatrists have returned to serve as general practitioners and are reinforcing patient care teams dealing with COVID-19. At this time, there is recognition of the value of basic medical training and the initial stages of residency, during which the practical training in medicine and neurology essential for the good practice of psychiatry takes place. The current health emergency has once again reminded us

that psychiatry is a medical specialty and that psychiatrists can and should act as doctors, both in the field of our specialty and when, as in the current crisis or due to other circumstances (accidents, disasters), our most fundamental medical knowledge is required. Without diminishing the complexity of the psychological and social determining factors that are so important to the practice of psychiatry, the present crisis does and will to continue to emphasize the medical model that underlies the practice of the specialty and the value of good public health.

The psychological aspects of medical practice

Just as psychiatry is a medical specialty, medicine cannot be dissociated from the psychological aspects of medical practice that are so important for the practice of any specialty that cares for the sick, including, obviously, psychiatry. In the midst of a health crisis, hospitals have been compelled to develop protocols for the psychological care of patients, their families, and professionals themselves. Patients need this because the infectious characteristics of COVID-19 require they spend long days and weeks in social isolation, separated from their loved ones and comforted only by professionals completely shrouded in masks and gowns that make them practically unrecognizable and who do much of their observing from a distance. For the same reason, families are more in need of information and

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support, since they cannot be with their hospitalized loved ones. Health professionals, for their part, are working longer hours than ever, under often precarious conditions due to lack of equipment and resources, caring for patients with health problems that are different from those they usually see and that comprise a less than predictable risk of sudden deterioration and death, while they watch their own strength undermined by the wear and tear of so much professional dedication,¹ as we will discuss in greater depth below.

This epidemic will showcase psychological support as a health instrument for the three aforesaid groups, and it will reinforce the collaboration between psychiatrists and clinical psychologists, together with nursing and social work teams, in the practice of health psychology.

Consultation and liaison psychiatry

Sometimes viewed as a “minor” subspecialty of psychiatry, or one that is subordinate to medical and surgical specialties, underfunded in healthcare systems based on revenue generated, liaison psychiatry has gained prominence during the COVID-19 epidemic. Many hospitals have elected to move patients hospitalized in inpatient psychiatric wards to other specialty wards once it is confirmed that they have COVID-19 in addition to their psychiatric disorder, leaving the management of these patients to the consultation and liaison psychiatry staff. In many hospitals, staff assigned to consultation and liaison psychiatry have also taken over psychological support for patients isolated due to the infection, counting on clinical psychologists and nursing personnel for that purpose along with the psychiatrists themselves. Liaison psychiatrists have also faced the challenge of learning and recognizing the adverse effects and interactions of a series of drugs whose use was previously much more anecdotal (chloroquine and hydroxychloroquine, tocilizumab, remdesivir, atazanavir, lopinavir/ritonavir, favipiravir, azithromycin, and many more) that are currently being used against SARS CoV-2, in addition to others that are already well known such as corticosteroids and interferon beta. Corticosteroids can cause manic symptoms when administered as a bolus,² and interferon (especially alpha, but also beta) can produce depressive symptoms.^{3,4} Hydroxychloroquine can cause anxiety and, less frequently, psychosis, and can interact with some antipsychotics, increasing the levels of phenothiazines.⁵ Atazanavir and liponavir/ritonavir can substantially increase the levels of quetiapine, lurasidone, ziprasidone, and pimozone, as well as those of certain benzodiazepines, such as midazolam and triazolam.⁶ Carbamazepine, meanwhile, reduces levels of atazanavir, remdesivir, chloroquine, and hydroxychloroquine. Disulfiram and nalmeferene should be discontinued in patients with alcohol addiction. In patients treated with clozapine, SARS CoV-2 infection may lower the white blood cell count and a dose reduction is advisable.⁷ In general, there is an association between administration of antipsychotics and an increased risk of pneumonia (not demonstrated in the specific case of coronavirus infection), but there are several confounding variables and the benefit–risk balance is generally favorable for psychopharmacological treatment.⁸

When the pandemic recedes, it is to be hoped that the important work of consultation and liaison psychiatry teams will be better recognized and even heightened.

Mental health home care

Home care, including its more intensive version, hospitalization at home, is playing a key role in avoiding hospital admissions for mental disorders (which would put patients at greater risk of contracting COVID-19) and ensuring good care of patients who, for a variety of reasons, are not candidates for telemedicine care. The home care staff must be tested for COVID-19 and must be adequately protected, keeping a safe distance at all times.⁹ Although not all patients are candidates for this type of care, the COVID-19 pandemic has shown that home care can, in many cases, substitute for admission to a psychiatric hospitalization unit, especially in situations such as the current one where many psychiatric wards have had to be converted into COVID-19 wards, and it allows certain treatments such as long-term injectables⁹ to be given, white blood cell counts to be monitored in patients treated with clozapine,⁷ and lithium levels to be checked.

This home care is also important for people with intellectual disabilities and/or autism and patients with severe mental disorders and poor functionality who live with older caregivers. During the pandemic, it is advisable to call the homes of all such patients and, if there is no answer, to provide a home visit, since the caregiver may have died and the person with a mental disorder may be in need of care. In the case of homeless people, many of whom have mental disorders, home care is a misnomer but takes on a similar meaning when caring for this group in shelters and spaces used for their lockdown. In countries without a powerful public health system, an upswing is expected in this group so vulnerable to diseases and economic crises.

Finally, nursing homes, severely penalized by the infectious disease, have also been candidates for home treatment, avoiding unnecessary transfers to hospitals. In short, home care, including hospitalization at home, is also a resource to be promoted after the acute phase of the pandemic.

Telepsychiatry: online community mental health care

One of the first measures universally adopted in all countries is a transition to remote care through outpatient televisits via telephone, chat, or video call. Undoubtedly, the field of mental health is one that is best suited to this change since physical examination is generally less crucial than in other conditions.¹⁰ Even so, the psychopathological examination is more limited, especially if the audio-only telephone route is used without visual information. Although it is foreseeable that after the pandemic there will be a return to the format of face-to-face visits, this crisis has made it clear that many unnecessary trips can be saved and that remote communication can, at least in part, replace or complement the in-person visit. This is undoubtedly one of the lessons we would do well to learn after the COVID-19 outbreak.

Big data approaches will undoubtedly be incorporated as a tool to fight the virus, as has been done in other coun-

tries such as China and South Korea. All those that have a digitally literate population and access to smartphones will use these resources to navigate the return to social normality. Therefore, mHealth or mobile health is going to play an increasingly important role and can also be used to benefit mental health,^{11,12} provided that the aspects of confidentiality and data protection are properly taken into account.¹³ In Spain, the Spanish Society of Psychiatry has made a series of recommendations in this regard.¹⁴ Post-COVID-16 Psychiatry will use digital resources, such as apps, much more to provide mental health services, as an instrument of both case management and empowerment.¹⁵

Lockdown and its impact on mental health

Billions of people worldwide have been confined to their homes during this pandemic. Some countries have been stricter than others, but in general very hard and fast rules have been established, such as Spain's declaration of a state of emergency, which has kept most of the population (except essential services) at home for weeks. Lockdown is a source of stress and anxiety and certain patients may decompensate. The Spanish Society of Psychiatry has made mental health care recommendations for the general population.¹⁴ It can be particularly challenging for children,^{16,17} especially for those with neurodevelopmental disorders in whom routine changes cause great stress (e.g., autism spectrum disorders or intellectual disability). The Spanish Royal Decree of the state of emergency allows people with disabilities to get out and walk, although the greater complexity of treating these patients if they become infected, the need for them to be accompanied by a family member resulting in many possibilities for becoming infected, and the fact that, in the context of such a health emergency, they might not be candidates for a critical care bed due to a so-called "ceiling of therapy" make it more inadvisable for them than other populations to leave home and increase their risk of infection. In some cases, therapeutic adherence may be compromised. People with Alzheimer's disease or intellectual disability may have difficulty understanding the need to stay home. Patients with schizophrenia and severe mental disorders, who have their own needs,¹⁸ may also be more vulnerable. Addicted individuals may experience withdrawal syndrome due to difficulty obtaining drugs, while other addictions, such as alcoholism, smoking, and online gambling (other than sports betting, due to cancelation of games) may worsen. For women and children who are victims of domestic violence, the lockdown situation can be especially serious. People with COVID-19 are also isolated and miss contact with their relatives, as do families when a loved one is admitted to the hospital. Feelings of rage, anger, frustration, and guilt are common during lockdown and can complicate living together. Based on surveys conducted during lockdown, it is recommended to self-limit consumption of pandemic news, get exercise, maintain a healthy diet, and engage in a variety of leisure activities, both as a family and individually.¹⁹ Relaxation and mindfulness techniques can also be helpful, and avoiding screen time before bed can prevent insomnia.²⁰ As the lockdown relaxes (depending on the positive outcome of the pandemic), some of these emotional disturbances will dis-

appear, but some people may also show delayed effects in the form of anxiety disorders and depression.

Grief

COVID-19 has caused extremely high mortality, since the world population is not immunized against the virus. The elderly and people with underlying conditions or immunodeficiencies have been particularly vulnerable, but also health professionals, exposed to a higher viral load. Death by COVID-19 carries the added cruelty of isolation. Death in solitude not only causes suffering to those who die, but it can leave sequelae in the form of pathological mourning for those close to them and also for health professionals, who are sometimes the only ones there to provide support for the terminally ill patient. To prevent the aftereffects of these deaths in solitude, health professionals in charge of managing communication with the patient and the family can be advised by experts in end-of-life and palliative care. Once again, the role of health psychology is fundamental. A serene, empathetic attitude, active listening, and supportive care for those in pain are of great help. Symbolic and spiritual aspects are also important. Some patients with severe mental disorders may be at the mercy of their illness if their caregiver dies. We address the issue of grief and guilt in healthcare professionals in the next section. When the health emergency ends, we will be aware of the importance of hospitals having teams and professionals who are experts in supporting terminally ill patients and their families, as well as their most exposed colleagues, such as intensivists, oncologists, hematologists, etc., and all those who have been on the front lines during this crisis. We must be able to anticipate the expected high prevalence of complicated grief that will surely ensue by setting up preventive plans that identify high-risk subjects in the early stages. The often marginalized practice of prevention in mental health should emerge strengthened by a crisis like this.²¹

Health care professionals and their mental health

As we have discussed in the sections on the psychological aspects of medical practice and grief, health professionals have endured this crisis with an overload of work, generally precarious safety conditions, anxiety at the risk of contagion, and a higher level of selflessness when having to perform tasks for which many were not prepared.¹ Furthermore, knowing that they are at risk, many have restricted their contact with their families or have confined themselves to hotels or to their own health facilities. Although many psychiatrists have continued to work remotely with patients, it is likely that they will encounter a significant volume of consultations, patients with exacerbations, and health professionals with burnout or post-traumatic stress disorder in the near future. Burnout is already a diagnosis recognized by the WHO, and it would not be surprising that, if work overload persists, there will be an increase in cases among healthcare workers, including especially those who work in nursing homes, where mortality has been extremely high. This epidemic has several variables prejudicial to the mental health of professionals.²² Firstly, the etiological agent is

not well known, there is no proven effective treatment, and it is not easy to predict who will experience the most serious complications that require critical care. Secondly, the massive demand means that specialists working in specialties that do not usually treat patients of this nature (we have seen pediatricians administering sedation to dying 80-year-old patients) have to do so in this situation. Thirdly, health professionals are neither prepared nor trained to let people die whom they could save under normal circumstances; the shortage of critical care beds has meant they must deny intensive care beds when doctors request them because their patients are not a priority due to age, comorbidity, etc. (the “ceiling of therapy”). This denial generates a great emotional load on doctors who see how people who could have been saved a few weeks ago cannot now be saved. The decision to prioritize critical beds also generates a heavy responsibility and in many cases guilt. The moral injury caused by many of these decisions will certainly take its toll in the future.²³ Fourthly, workload and the need to make non-consensus decisions make many professionals work in a dissociated way, since not blocking their emotional side would cause them to collapse. Fifthly, there is a challenge that wears out professionals, consisting of fear of contagion (for themselves, which also implies having to stop working and helping colleagues, and for infecting their family, especially the elderly), and of guilt at not doing more due to the limitations imposed by fear. Sixthly, there is often a sense of learned helplessness and hopelessness. A patchwork where a day when the professional has given his or her all is followed by a day of even greater load and greater stress. Good work is not rewarded – or even the opposite – and there is a feeling of lack of internal control with demands that one cannot act upon or modulate.

Prevention of burnout and stress disorders requires rest and disconnection. For this reason, it would be advisable for shifts and breaks to be scheduled after peak demand and for the health system provide relaxation, workout, and reading areas in the facilities themselves, with mandatory time set aside for this. A mentally healthy professional is a source of health. The post-COVID-19 era must take better care of healthcare professionals, and particularly their mental health.

Humanism, deontology, and the effects of difficult decisions

This epidemic has tested the ethical principles of the medical profession, forcing many professionals to make difficult decisions. Many hospitals have revised their “ceiling of therapy” protocols to agree on the criteria for invasive interventions, especially with regard to assisted breathing.²⁴ The epidemic will also eventually entail certain privacy concessions (for example, requiring serological status to be displayed in a mobile app). Psychiatrists will treat healthcare colleagues, especially those on the front lines caring for COVID-19 patients and unaccustomed to making life and death decisions, experiencing symptoms of stress and possible feelings of guilt or frustration.²³ When the saturation of health services has declined, the capacity of the system to deal with situations such as the present one should be reevaluated, and measures should be taken to design

intensive care units and procedures to avoid post-traumatic disorders.

Relapses and late decompensation

It is obvious that people with mental disorders are also going to be direct and indirect victims of the pandemic.²⁵⁻²⁷ Although the number of emergency room visits and hospital admissions for patients with psychiatric disorders decreased significantly at the height of the health emergency, allowing many hospitals to use psychiatric beds for infected patients without mental disorders, a rebound effect is expected in the medium term. In fact, this is also happening with other non-psychiatric medical conditions, such as strokes and heart attacks, which are seen in the emergency room much later than usual and with more serious symptoms. Fear of infection and confinement are undoubtedly part of the reasons for the drop in demand. What telepsychiatry, home care, and psychiatric consultation fail to resolve will be reflected in a probable increase in acute crises and exacerbations of psychotic and affective disorders in the near term. The temporary closure of day hospitals and rehabilitation centers may also be a source of problems in the medium term. Adherence difficulties may also have an impact. As soon as possible after the pandemic, it will be necessary to reopen the resources that have been closed or reduced to a minimum and to reinforce inpatient and outpatient mental health and primary care services.

Education and research

As of today, there are thousands of teaching activities that have been canceled or postponed due to the pandemic, including major events and conferences (the first and most significant of which is the MWC, formerly the Mobile World Congress, which was scheduled to be held in Barcelona in February 2020), and, many dedicated to psychiatry, including the congresses of the European Psychiatric Association and the American Psychiatric Association. Conferences that were scheduled for after the summer are already being canceled. Since the start of the lockdown, many teaching activities have gone online, and most of them will probably continue that way throughout the whole of 2020, since easing of the lockdown will not be quick, leaving the celebration of massive events for last. The first in-person events to recover will be clinical and scientific sessions at facilities that are themselves small. Although the crisis is going to spur distance learning, social interaction and face-to-face exchange of information have irreplaceable components; conferences also fulfill a social function that helps us cope with day-to-day healthcare efforts and promotes research through collaboration that is often established after personal acquaintance.

The writing of educational materials such as review articles and books, for example, has however been reinforced by confinement. Many researchers have used this time to systematically review scientific topics, and journals do not seem to have seen any drop in the submission rate of this type of scientific article.

Furthermore, the training of residents in psychiatry, clinical psychology, and mental health nursing has been affected

by the health emergency and many have been drafted to serve COVID-19 patients or to provide psychological support to patients and their families, and professionals. Even medical students have been participating in work to confront the crisis. It is likely that this will be a valuable learning experience, and scheduled rotations and internships will probably be resumed soon, but some of these young people may feel the psychological impact of having been on the front lines.

In research, the pandemic has remarkably enhanced scientific exchange. Although many researchers have had to temporarily leave their jobs in order to shelter in place, many journals, such as the *New England Journal of Medicine*, have begun offering open access to all articles on COVID-19, and collaborative clinical trials have been designed, approved, and executed in record time. The scientific community has broken down borders and is collaborating in search of treatments and vaccines. Some of these projects will investigate the effects of lockdown and many of the currently unresolved issues we discuss in this article regarding the relationship between COVID-19 and mental health. Beyond the infectious disease itself, it is to be hoped that this tragedy will underscore the importance of biomedical research and, like public health, receive the recognition it deserves at the budgetary and social level. The hope is that governments will allocate much more of their budgets to collaborative translational research, as Spain has done with the CIBER consortium,²⁸ and to health registries.^{29,30} In short, virtual conferences and distance learning will be greatly enhanced after the pandemic, and this will spare a lot of travel, although not all. Collaborative research will be enhanced and the speed of knowledge advancement, including in mental health, may be substantially increased. The opposite would be a very serious mistake.

Conclusions

Venturing to predict the future is very risky, but reflecting on the changes brought about by such an extraordinary event as the COVID-19 pandemic and its impact on the practice of Psychiatry can help us turn a crisis into an opportunity. Once the tragedy is behind us, we can quantify the social and health damage and look for solutions to the aftereffects; it can be a good thing to celebrate the fact that values such as solidarity, dedication to service, courage, adaptation to change, striving, and intelligence have guided most of the actions of health professionals. Psychiatrists have again become general practitioners, psychologists, social workers, and caregivers, in harmony with others who have those specific duties as part of their profession. Teamwork has been accomplished. Solutions have been found to reduce the impact of the health crisis on the most vulnerable among us, such as people with mental disorders. Some of those solutions will enrich our ability to meet the challenges of mental health in the near future. We must value psychopharmacological treatments, especially the most innovative ones,³¹ and psychological interventions. Perhaps we will become a little more obsessive, especially with hygiene, and social customs may change. Let us hope that society as a whole and its representatives seize the opportunity to strengthen our public health and our research facilities and provide them with much-needed resources, even in times of uncer-

tainty and economic crisis, such as those that lie ahead. This epidemic will showcase many of our specialty's skills.

Conflicts of interest

EV has received funding unrelated to the present work for research projects and/or honoraria as a consultant or speaker from the following entities: AB-Biotics, Allergan, Angelini, Ferrer, Gedeon Richter, Janssen, Lundbeck, Otsuka, Sage, Sanofi-Aventis, Sumitomo, Sunovion, Takeda, Instituto de Salud Carlos III, the EU Seventh Framework Program and Horizon 2020, the Brain & Behavior Research Foundation (NARSAD), and the Stanley Medical Research Institute.

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References

- Chen Q, Liang M, Li Y, Guo J, Fei D, Wang L, et al. Mental health care for medical staff in China during the COVID-19 outbreak. *Lancet Psychiatry*. 2020;7:e15–6.
- Wada K, Yamada N, Sato T, Suzuki H, Miki M, Lee Y, et al. Corticosteroid-induced psychotic and mood disorders: diagnosis defined by DSM-IV and clinical pictures. *Psychosomatics*. 2001;42:461–6.
- Udina M, Moreno-España J, Capuron L, Navinés R, Farré M, Vieta E, et al. Cytokine-induced depression: current status and novel targets for depression therapy. *CNS Neurol Disord Drug Targets*. 2014;13:1066–74.
- Udina M, Navinés R, Egmond E, Oriolo G, Langohr K, Gimenez D, et al. Glucocorticoid receptors, brain-derived neurotrophic factor serotonin and dopamine neurotransmission are associated with interferon-induced depression. *Int J Neuropsychopharmacol*. 2016;19.
- Mascolo A, Berrino PM, Gareri P, Castagna A, Capuano A, Manzo C, et al. Neuropsychiatric clinical manifestations in elderly patients treated with hydroxychloroquine: a review article. *Inflammopharmacology*. 2018;26:1141–9.
- Liverpool Drug Interactions Group. Covid-19 drug interactions. University of Liverpool; 2020.
- Siskind D, Honer WG, Clark S, Correll CU, Hasan A, Howes O, et al. Consensus statement on the use of clozapine during the COVID-19 pandemic. *J Psychiatry Neurosci*. 2020;45:2.
- Papola D, Ostuzzi G, Gastaldon C, Morgano GP, Dragioti E, Carvalho AF, et al. Antipsychotic use and risk of life-threatening medical events: umbrella review of observational studies. *Acta Psychiatr Scand*. 2019;140:227–43.
- Garriga M, Agasi I, Fedida E, Pinzón-Espinosa J, Vazquez M, Pacchiarotti I, et al. The role of Mental Health Home Hospitalization Care during the COVID-19 pandemic. *Acta Psychiatr Scand*. 2020, <http://dx.doi.org/10.1111/acps.13173> [Epub ahead of print] PubMed PMID: 32279309.
- Hollander JE, Carr BG. Virtually perfect? Telemedicine for Covid-19. *N Engl J Med*. 2020, [10.1056/NEJMp2003539](https://doi.org/10.1056/NEJMp2003539) [Epub ahead of print] PubMed PMID: 32160451.
- Hidalgo-Mazzei D, Murru A, Reinares M, Vieta E, Colom F. Big data in mental health: a challenging fragmented future. *World Psychiatry*. 2016;15:186–7.
- Hidalgo-Mazzei D, Young AH, Vieta E, Colom F. Behavioural biomarkers and mobile mental health: a new paradigm. *Int J Bipolar Disord*. 2018;6:9.
- Harari GM, Lane ND, Wang R, Crosier BS, Campbell AT, Gosling SD. Using smartphones to collect behavioral data in psychological science: opportunities practical considerations, and challenges. *Perspect Psychol Sci*. 2016;11:838–54.
- Sociedad Española de Psiquiatría. <http://www.sepsiq.org/file/InformacionSM/SEP%20GU%C3%8DA%20COVIDSAM.pdf>.
- Hidalgo-Mazzei D, Llach C, Vieta E. mHealth in affective disorders: hype or hope? A focused narrative review. *Int Clin Psychopharmacol*. 2020;35:61–8.
- Liu JJ, Bao Y, Huang X, Shi J, Lu L. Mental health considerations for children quarantined because of COVID-19. *Lancet Child Adolesc Health*. 2020.
- Cluver L, Lachman JM, Sherr L, Wessels I, Krug E, Rakotomalala S, et al. Parenting in a time of COVID-19. *Lancet*. 2020.
- Lahera G, Cid J, Gonzalez-Pinto A, Cabrera A, Mariner C, Vieta E, et al. Needs of people with psychosis and their caregivers: "In their own voice". *Rev Psiquiatr Salud Ment*. 2020, <http://dx.doi.org/10.1016/j.rpsm.2019.11.002>, pii: S1888-9891(19)30103-X.
- Fullana MA, Hidalgo D, Vieta E, Radua J. Coping behaviors associated with decreased anxiety and depressive symptoms during the COVID-19 pandemic and lockdown. *J Affect Disord*; in press.
- Dickerson D. Seven tips to manage your mental health and well-being during the COVID-19 outbreak. *Nature*. 2020.
- Arango C. Lessons learned from the coronavirus health crisis in Madrid, Spain: How COVID-19 has changed our lives in the last two weeks. *Biological Psychiatry*. 2020, <http://dx.doi.org/10.1016/j.biopsych.2020.04.003>.
- Arango C, Díaz-Caneja CM, McGorry PD, Rapoport J, Sommer IE, Vorstman JA, et al. Preventive strategies for mental health. *Lancet Psychiatry*. 2018;5:591–604.
- Greenberg N, Docherty M, Gnanapragasam S, Wessely S. Managing mental health challenges faced by healthcare workers during covid-19 pandemic. *BMJ*. 2020;368:m1211.
- Emanuel EJ, Persad G, Upshur R, Thome B, Parker M, Glickman A, et al. Fair allocation of scarce medical resources in the time of Covid-19. *N Engl J Med*. 2020, <http://dx.doi.org/10.1056/NEJMs2005114>.
- Yao H, Chen JH, Xu YF. Patients with mental health disorders in the COVID-19 epidemic. *Lancet Psychiatry*. 2020:e21.
- Bo HX, Li W, Yang Y, Wang Y, Zhang Q, Cheung T, et al. Post-traumatic stress symptoms and attitude toward crisis mental health services among clinically stable patients with COVID-19 in China. *Psychol Med*. 2020;27:1–7.
- Stefana A, Youngstrom EA, Jun C, Hinshau S, Maxwell V, Michalak E, et al. The Covid-19 pandemic is a crisis and opportunity for bipolar disorder. *Bipolar Disord*; in press.
- Salagre E, Arango C, Artigas F, Ayuso-Mateos JL, Bernardo M, Castro-Fornieles J, et al. CIBERSAM: ten years of collaborative translational research in mental disorders. *Rev Psiquiatr Salud Ment*. 2019;12:1–8.
- Vieta E, Arango C, Rush AJ. The need for paediatric registries to assess long-term brain effects of psychotropic medications: the case of bipolar disorder. *Eur Neuropsychopharmacol*. 2018;28:1181–4.
- Pérez V, Elices M, Prat B, Vieta E, Blanch J, Alonso J, et al. The Catalonia Suicide Risk Code: a secondary prevention program for individuals at risk of suicide. *J Affect Disord*. 2020;268:201–5.
- Vieta E. Disruptive treatments in psychiatry. *Rev Psiquiatr Salud Ment*. 2020;13:1–4.