



Original article

How the COVID-19 pandemic changed the world of addiction: considerations on the impact on substance use and treatment

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Summary

The CoronaVirus (CoViD)-19 pandemic has affected life and mental health, in relation to several factors, including fear, uncertainty, anxiety, social isolation, loneliness, trade and movement disruption, and economic consequences. In these circumstances vulnerable categories having a higher risk of mental illness could be considered the elderly (> 80 years), individuals residing in disadvantaged areas, minority in disadvantaged areas, ethnic minorities, children/adolescents and pregnant women, health workers, and in general individuals with a positive psychiatric history. For sure, a peculiar situation is that of people diagnosed with a Substance Use Disorder (SUD), as they may experience: a) quantitative changes in substance use, e.g. an increase in drug use related to the negative impact of the stressful situation; b) a switch to other substances if access to those previously used is limited; c) relapsing into alcohol and/or alcohol and/or substances if they had stopped. Drug users might have a higher risk to become infected with COVID-19, either because of a possible physical comorbidity, e.g. pulmonary or cardiovascular diseases, HIV, viral hepatitis infections; or because of a psychological/psychiatric comorbidity, which includes a state of general distress, sleep disturbances, anxiety disorders, mood disorders, psychotic symptoms; and by any disadvantaged social condition (homelessness, prisoners, etc.), or more generally, socio-economic problems arising from drug dependence. Thus, the purpose of the present article is to show the impact COVID-19 had on people with SUDs and the intervention strategies that addiction services have then adopted. A reorganisation of addiction services and facilities, and the use of telemedicine are strategies for reducing or impeding COVID-19 transmission among drug users, avoiding overcrowding and ensuring continuity of care for people with SUD. The development of multidisciplinary support could be useful to reduce mental distress due to misinformation and teach strategies to cope with possible pandemic-related problems.

Introduction

After over one year of COVID-19 outbreak we have observed how this pandemic affected the mental health of the general population, in relation to various factors including fear, the sense of uncertainty, constant apprehension, social isolation, loneliness and possible economic repercussions¹⁻³. Previously, in the 2003 outbreak of Severe Acute Respiratory Syndrome (SARS)^{4,5}, an increase in suicidal behaviors (suicidal ideation, suicide attempts and actual suicide)⁶⁻⁸ and an increase in anxiety and mood disorder were recorded, with a prevalence

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Conflict of interest

The Authors declare no conflict of interest.

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of traumatic-type disorders such as post-traumatic stress disorder (PTSD)^{1,6,9-17}; these complications appeared evident in subjects with Substance Use Disorders (SUDs)^{18,19}.

A recent study¹⁹ estimated that unemployment, isolation and high levels of stress due to the COVID-19 pandemic could cause up to 75,000 “desperate deaths” from substance use and / or alcohol and suicide¹⁹. The elderly (> 80 years), individuals residing in disadvantaged areas, ethnic minorities, children/adolescents and pregnant women can also be considered vulnerable categories^{1,14,16,20} although previously the high risk of mental illness was identified only in individuals with a positive psychiatric history^{1,14,16,20}. Healthcare workers should also be considered vulnerable subjects, as they have experienced emotional overload due to organizational problems related to the lack of adequate personal protective equipment, the reduction of human resources and relentless work shifts²¹⁻²⁴. Stress caused by fear of becoming infected and infecting family members and friends, high mortality rates, grieving the loss of patients and colleagues, and separation from families are other possible vulnerabilities for healthcare workers²³⁻²⁵. The female gender seems to be a category at greater risk for the incidence of anxiety and post-traumatic symptoms and the category of nurses more affected than medical personnel²⁶. The aim of the present study is to show the impact that COVID-19 had on the people with SUDs and the intervention strategies that the Services dedicated to addiction have adopted.

Consumption of substances and COVID-19

In this scenario, SUD patients could be particularly vulnerable, being able to experience: a) quantitative changes in substance consumption, for example a reactive increase to the negative impact of the stressful situation; b) the transition to other substances if the access to those previously used is limited; c) a relapse in consuming alcohol and/or substances if they had stopped. Attention should be done to the high risk for drug users to become infected with COVID-19, either because of a possible possible physical comorbidity, e.g. pulmonary disease or cardiovascular disease, HIV, viral hepatitis infection; or because of a psychological/psychiatric comorbidity, which includes a state of general distress, sleep disturbances, anxiety disorders anxiety disorders, mood disorders, psychotic symptoms; or because of possible disadvantaged social conditions (homeless people, prisoners, etc.), economic difficulties or, more generally, socio-economic problems more generally socio-economic problems resulting from drug addiction^{8,12,27-29}. Moreover, abusers can hardly adhere to the rules and limitations imposed by the pandemic, for example under the influence of alcohol/substances they may be more likely to violate protocols, not to respect social distancing, not to adapt to the use of the mask, not to carry out proper hand hygiene also due to their increased levels

of impulsiveness³⁰. In relation to alcohol consumption, it should be noted that online and takeaway alcohol sales during the pandemic have greatly increased³¹; this data, combined with the fact that socialization opportunities are limited, can lead the subject to use alcohol mainly at home and in solitude, leading to more alcohol consumption than social drinking³⁰.

The COVID-19 pandemic has hit drug markets, causing on the one hand an increase in the prices of some of the illicit substances sold on the black market, and on the other a reduction in purity. For example, the availability of some synthetic substances, such as methamphetamine, has drastically reduced due to air travel restrictions and flight cancellations, while cocaine, which mostly traveled by sea, continues to be detected in European ports³², like heroin and opioids. Finally, cannabis appears to be less available, due to restrictions on movement across regions. There is the possibility that these disruptions will become increasingly severe and that the risks to people who use substances increase, for example by affecting the purity of substances, adulterating them, or contaminating them with synthetic compounds, as in the case of heroin contaminated with opioids synthetics such as fentanyl. Consequently, there is a risk of switching to the consumption of more dangerous substances, street drugs and new psychoactive substances, such as synthetic cannabinoids³³. In fact, due to the disruption of drug markets, the reduction in supply and restrictions on access to drugs, the search and purchase of drugs on the web could increase. In line with this, the use of common drugs such as narcotics has emerged in some countries, in this case both prescription drugs, such as opioids, benzodiazepines, some antipsychotics (e.g. quetiapine and olanzapina), the gabapentinoids pregabalin and gabapentin, Z-drugs (for example, zolpidem)³⁴⁻³⁶; and some over-the-counter drugs, such as some antihistamines, for example promethazine, some codeine-based cough syrups, and/or ephedrine, and the antidiarrheal loperamide^{34,35}.

The crisis brought about by COVID-19 is likely to increase the need for access to drug treatments and services, despite the general overload of health systems and emergency services^{28,33}. In fact, access to drug addiction treatment services has sometimes been interrupted by the need for self-quarantine, social isolation and other public health measures taken to contain COVID-19 contagion^{28,33,37}; the same drug addiction structures such as the SerD must face the shortage of personnel due to self-isolation and the disorganization of services^{28,33,38}. Therefore, to counteract the possible negative effects^{5,14,20,28,33}, some preventive interventions have been adopted, including: a) an increased supply for home pharmacological treatment of opioid-dependent patients (suboxone/methadone) in cases that allowed it³⁹⁻⁴¹; b) support in the management and prescription of controlled substances^{27,33,42}; c) tele-health for monitoring drug addicted patients; d) participation in remote employee support groups via online meetings^{17,27,38}.

Telemedicine and SUD

Although patients with SUDs had an increased requirement of support during the COVID-19 pandemic a decrease in their access to services was recorded: both rehabilitation facilities and employee support groups interrupted programs and limited new admissions^{18,28,38,41}. Self-help support options, such as Alcoholics Anonymous (AA) and Narcotics Anonymous (NA), which typically represent the primary treatment option in SUD, have become even less accessible. The regulations related to the virus's spread prevention created the urgent need of alternative approaches to treat addiction^{43,44}. Telemedicine, providing remote healthcare through telecommunications technology, may guarantee services continuity, on the one hand satisfying the needs of patients with SUDs and on the other reducing the risk of infection⁴⁵⁻⁴⁷. The four most common telemedicine modalities in SUDs treatment programs are computer assessments (45%), telephone support during recovery (29%), telephone therapy (28%) and video call (20%). Tools such as texting, smartphone app and virtual reality interventions are less used⁴⁸⁻⁵⁰. Several studies reported the positive effects of this kind of intervention in patients with SUDs⁴³. Patients should be encouraged to participate to virtual 12-step group meetings and other self-help meetings, as well as professional-led groups. Useful is the presence of an online sponsor or the maintenance of a virtual connection with their current sponsors. However, these methods have limitations, including the virtual type of interpersonal relationship and the unavailability of a reliable telephone service or access to the Internet or the necessary devices. Some patients may also have some concerns about their privacy and security⁵⁰⁻⁵².

This difficult period led to a rapid increase of technology use in a short period of time. For this reason, many clinicians have been inadequately prepared to use telemedicine tools, causing a significant delay or even the interruption of patient support. Telemedicine is a necessary and valid response to the crisis, but its role in ensuring clinical care in post-pandemic health systems will depend on the characteristics of the health systems in which it is applied. In order to evaluate the short and long-term outcomes of such interventions in patients with SUD it will be necessary to compare personal assistance with that in telemedicine. Adherence to treatment, occurrence of relapses, maintenance of abstinence, comorbidities, access to Emergency Services and the results of toxicological tests must be evaluated⁴³.

COVID-19 and craving

The first Italian study conducted during the lockdown in the SUDs population, found that the subjects had the same psychopathological burden of the psychiatric population, the subjects with double diagnosis, the subjects with SUD and the general population. An increase of stress,

anxiety and depression was reported. On the other hand, the level of craving was lower than that of the general SUD population. In the study it is hypothesized that this unexpected finding may be the result of: (i) a perception of reduced availability of the substance during the lockdown. In fact, this phenomenon could have reduced craving priming; (ii) a possible reduction in social pressure induced by the increase in the sense of belonging of the dependent patient who is in a moment of emergency shared with the rest of the population. For this reason, the sense of marginalization and rejection, which often contribute to increasing the craving and use of the substance in the addicted patient, could be decreased⁵³.

Another Italian study conducted on the population affected by pathological gambling found a reduction in craving during the first phase of the emergency; one of the causes could be the reduction of certain environmental stimuli such as the inability to access electronic gambling machines (EGMs)⁵⁴. In a second phase craving may increase due to persistent stressors caused by the pandemic. The craving assessment is helpful in the management of the SUD patient, not only for the current period, but also for a better understanding of the craving itself.

The clinical practice

Innovative and effective interventions should be planned to address the social effects of the pandemic and from the point of view of physical and mental health.

Patients should be properly informed and aware of the most common psychological effects of a pandemic, and healthcare professionals play a crucial role in this process. COVID-19, associated with common environmental factors such as stress or trauma, can contribute to both the development of a psychiatric disorder and the development of a SUDs. Urgent action is needed to improve mental health care, emergency preparedness and a prompt and effective response to people with SUDs. Therefore, mental health services should develop and evaluate: (i) psychoeducational strategies that particularly concern the possibility of self-injurious/suicidal behaviors, overdose and domestic violence; (ii) staff training to support new work methodology; (iii) valid tools for remote diagnostic evaluation; (iv) care pathways for people at risk^{1,10,14}. Healthcare professionals should develop prevention strategies for the transmission of COVID-19 among drug addicts, such as preventing overcrowding and ensuring continuity of care for people with SUD⁵⁵⁻⁵⁷.

Monitoring of the need for care and support of vulnerable patients and social workers should be carried out^{2,3,8,57,58}. Telemedicine needs to be strengthened and supported with adequate funding in the post-pandemic. Healthcare professionals should be educated on the use of telemedicine and should have adequate equipment. Physicians should be alerted to a possible drug misuse, with increased prescription requests or over-sales of over-the-counter products that can be abused. The development

of multidisciplinary support platforms could be useful to reduce mental distress due to disinformation and teach strategies to cope with possible problems related to the pandemic¹⁵. These precautions and strategies can be helpful in supporting post-pandemic mental health.

References

- 1 Gunnell D, Appleby L, Arensman E, et al. Suicide risk and prevention during the COVID-19 pandemic. *Lancet Psychiatry* 2020;7:468-71. [https://doi.org/10.1016/S2215-0366\(20\)30171-1](https://doi.org/10.1016/S2215-0366(20)30171-1)
- 2 Holmes EA, O'Connor RC, Perry VH, et al. Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science. *Lancet Psychiatry* 2020;7:547-60. [https://doi.org/10.1016/S2215-0366\(20\)30168-1](https://doi.org/10.1016/S2215-0366(20)30168-1)
- 3 Smith K, Ostinelli E, Cipriani A. COVID-19 and mental health: a transformational opportunity to apply an evidence-based approach to clinical practice and research. *Evid Based Ment Health* 2020;23:45-6. <https://doi.org/10.1136/ebmental-2020-300155>
- 4 Chan SM, Chiu FK, Lam CW, et al. Elderly suicide and the 2003 SARS epidemic in Hong Kong. *Int J Geriatr Psychiatry* 2006;21:113-8. <https://doi.org/10.1002/gps.1432>
- 5 Chevance A, Gourion D, Hoertel N, et al. Ensuring mental health care during the SARS-CoV-2 epidemic in France: a narrative review. *Encephale* 2020;46(Suppl. 3):S3-S13. <https://doi.org/10.1016/j.encep.2020.04.005>
- 6 Mamun MA, Griffiths MD. First COVID-19 suicide case in Bangladesh due to fear of COVID-19 and xenophobia: possible suicide prevention strategies. *Asian J Psychiatr* 2020;51:102073. <https://doi.org/10.1016/j.ajp.2020.102073>
- 7 Griffiths MD, Mamun MA. COVID-19 suicidal behavior among couples and suicide pacts: case study evidence from press reports. *Psychiatry Res* 2020;289:113105. <https://doi.org/10.1016/j.psychres.2020.113105>
- 8 GOV.UK. COVID-19 mental health campaign launches. 2020. <https://www.gov.uk/government/news/COVID-19-mental-health-campaign-launches> (accessed May 19, 2020).
- 9 [https://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366\(21\)00091-2/fulltext](https://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366(21)00091-2/fulltext)
- 10 Courtet P, Olié E, Debien C, et al. Keep socially (but not physically) connected and carry on: preventing suicide in the age of COVID-19. *J Clin Psychiatry* 2020;81:20com13370. <https://doi.org/10.4088/JCP.20com13370>
- 11 Hao F, Tan W, Jiang L, et al. Do psychiatric patients experience more psychiatric symptoms during COVID-19 pandemic and lockdown? A case-control study with service and research implications for immunopsychiatry. *Brain Behav Immun* 2020;87:100-6. <https://doi.org/10.1016/j.bbi.2020.04.069>
- 12 Pfefferbaum B, North CS. Mental health and the COVID-19 pandemic. *N Eng J Med* 2020. <https://doi.org/10.1056/NEJMp2008017>
- 13 Substance Abuse and Mental Health Services Administration (SAMHSA). SAMHSA disaster technical assistance center. supplemental research bulletin. Issue 5: Traumatic stress and suicide after disasters. 2015. https://www.samhsa.gov/sites/default/files/dtac/srb_sept2015.pdf (accessed May 19, 2020).
- 14 Reger MA, Stanley IH, Joiner TE. Suicide mortality and coronavirus disease 2019 - A perfect storm? *JAMA Psychiatry* 2020. <https://doi.org/10.1001/jamapsychiatry.2020.1060>
- 15 Rajkumar RP. COVID-19 and mental health: a review of the existing literature. *Asian J Psychiatr* 2020;52:102066. <https://doi.org/10.1016/j.ajp.2020.102066>
- 16 Thakur V, Jain A. COVID 2019-Suicides: a global psychological pandemic. *Brain Behav Immun* 2020;88:952-953. <https://doi.org/10.1016/j.bbi.2020.04.062>
- 17 WHO. Mental health and psychosocial considerations during COVID-19 outbreak. 2020. <https://www.who.int/docs/default-source/coronaviruse/mental-health-considerations.pdf> (accessed May 24, 2020).
- 18 Dsouza DD, Quadros S, Hyderabadwala ZJ, et al. Aggregated COVID-19 suicide incidences in India: fear of COVID-19 infection is the prominent causative factor. *Psychiatry Res* 2020;28:113145. <https://doi.org/10.1016/j.psychres.2020.113145>
- 19 Petterson S, Westfall J, Miller BF. Projected deaths of despair during the coronavirus recession. *Well Being Trust* 2020;8:2020. <https://wellbeingtrust.org>
- 20 Wand APF, Zhong B-L, Chiu HFK, et al. COVID-19: the implications for suicide in older adults. *Int Psychogeriatr* 2020;16. <https://doi.org/10.1017/S1041610220000770>
- 21 CDC. Healthcare personnel and first responders: how to cope with stress and build resilience during the COVID-19 pandemic. 2020. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/mental-health-healthcare.html> (accessed July 7, 2020).
- 22 Epidemiology for public health. Istituto Superiore di Sanità. COVID-19: stress management among healthcare workers. 2020. <https://www.epicentro.iss.it/en/coronavirus/SARS-CoV-2-stress-management-healthcare-workers> (accessed July 7, 2020).
- 23 Walton M, Murray E, Christian MD. Mental health care for medical staff and affiliated healthcare workers during the COVID-19 pandemic. *Eur Heart J Acute Cardiovasc Care* 2020;9:241-7. <https://doi.org/10.1177/2048872620922795>
- 24 Wu K, Wei X. Analysis of psychological and sleep status and exercise rehabilitation of front-line clinical staff in the fight against COVID-19 in China. *Med Sci Monit Basic Res* 2020;26:e924085. <https://doi.org/10.12659/MSMBR.924085>
- 25 Zhuo K, Gao C, Wang X, et al. Stress and sleep: a survey based on wearable sleep trackers among medical and nursing staff in Wuhan during the COVID-19 pandemic. *Gen Psychiatr* 2020;33:e100260. <https://doi.org/10.1136/gpsych-2020-100260>
- 26 Huang JZ, Han MF, Luo TD, et al. Mental health survey of medical staff in a tertiary infectious disease hospital for COVID-19. *Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi* 2020;38:192-5. <https://doi.org/10.3760/cma.j.cn121094-20200219-00063>
- 27 Drug Enforcement Administration (DEA). COVID-19 information page. 2020. www.deadiversion.usdoj.gov/coronavirus.html (accessed May 21, 2020).
- 28 European Monitoring Centre for Drug and Drug Addiction (EMCDDA). The implications of COVID-19 for people who use drugs (PWUD) and drug service providers. 2020. http://www.emcdda.europa.eu/publications/topic-overviews/COVID-19-and-people-who-use-drugs_en (accessed May 19, 2020).
- 29 Zhu S, Wu Y, Zhu CY, et al. The immediate mental health impacts of the COVID-19 pandemic among people with or without quarantine managements. *Brain Behav Immun* 2020;87:56-8. <https://doi.org/10.1016/j.bbi.2020.04.045>
- 30 Zvolensky MJ, Garey L, Rogers AH, et al. Psychological,

- addictive, and health behavior implications of the COVID-19 pandemic. *Behav Res Ther* 2020;134:103715. <https://doi.org/10.1016/j.brat.2020.103715>
- ³¹ NielsenIQ. Rebalancing the 'COVID-19 effect' on alcohol sales. 2020. <https://www.nielsen.com/us/en/insights/article/2020/rebalancing-the-COVID-19-effect-on-alcohol-sales>
- ³² United Nations (UN). COVID-19 causes some illegal drug prices to surge, as supplies are disrupted worldwide. 2020. <https://news.un.org/en/story/2020/05/1063512> (accessed May 25, 2020).
- ³³ Volkow ND. Collision of the COVID-19 and addiction epidemics. *Ann Intern Med* 2020;173:61-2. <https://doi.org/10.7326/M20-1212>
- ³⁴ Levine DA. "Pharming": the abuse of prescription and over-the-counter drugs in teens. *Curr Opin Pediatr* 2007;19:270-4. <https://doi.org/10.1097/MOP.0b013e32814b09cf>
- ³⁵ Reeves RR, Ladner ME, Perry CL, et al. Abuse of medications that theoretically are without abuse potential. *South Med J* 2015;108:151-7. <https://doi.org/10.14423/smj.0000000000000256>
- ³⁶ Schifano F. Recent changes in drug abuse scenarios: the New/Novel Psychoactive Substances (NPS) phenomenon. *Brain Sci* 2018;8:221. <https://doi.org/10.3390/brainsci8120221>
- ³⁷ Volkow ND. Coping with the collision of public health crises: COVID-19 and substance use disorders. 2020. NIH Director's Blog with Dr. Volkow. <https://directorsblog.nih.gov/2020/04/21/coping-with-the-collision-of-public-health-crises-COVID-19-and-substance-use-disorders> (accessed May 19, 2020).
- ³⁸ Green TC, Bratberg J, Finnell DS. Opioid use disorder and the COVID 19 pandemic: a call to sustain regulatory easements and further expand access to treatment. *Subst Abuse* 2020;41:147-9. <https://doi.org/10.1080/08897077.2020.1752351>
- ³⁹ <https://www.frontiersin.org/articles/10.3389/fpsy.2020.00790/full>
- ⁴⁰ Advisory Council on the Misuse of Drugs (ACMD). COVID-19: ACMD advice on proposed legislative changes to enable supply of controlled drugs during a pandemic. 2020. <https://www.gov.uk/government/publications/acmd-advice-on-COVID-19-emergency-legislation-to-enable-supply-of-controlled-drugs> (accessed May 21, 2020).
- ⁴¹ Substance Abuse and Mental Health Services Administration (SAMHSA). FAQs: provision of methadone and buprenorphine for the treatment of opioid use disorder in the COVID-19 emergency. 2020. <https://www.samhsa.gov/sites/default/files/faqs-for-oud-prescribing-and-dispensing.pdf> (accessed May 19, 2020).
- ⁴² Levander XA, Wakeman SE. COVID-19 will worsen the opioid overdose crisis if we don't prepare now. *STAT* 2020. <https://www.statnews.com/2020/03/17/COVID-19-will-worsen-the-opioid-overdose-crisis-if-we-dont-prepare-now> (accessed May 25, 2020).
- ⁴³ Oesterle TS, Kolla B, Risma CJ, et al. Substance use disorders and telehealth in the COVID-19 pandemic era: a new outlook. *Mayo Clin Proc* 2020;95:2709-2718. <https://doi.org/10.1016/j.mayocp.2020.10.011>
- ⁴⁴ Lin LA, Casteel D, Shigekawa E, et al. Telemedicine-delivered treatment interventions for substance use disorders: a systematic review. *J Subst Abuse Treat* 2019;101:38-49.
- ⁴⁵ Hollander JE, Carr BG. Virtually perfect? Telemedicine for COVID-19. *New Engl J Med* 2020;382:1679-81. <https://doi.org/10.1056/NEJMp2003539>
- ⁴⁶ Huskamp HA, Busch AB, Souza J, et al. How is telemedicine being used in opioid and other substance use disorder treatment? *Health Aff (Millwood)* 2018;37:1940-1947.
- ⁴⁷ Minnesota Health Professionals Services Program. Online recovery resources provided by HPSP 2020. https://mn.gov/boards/assets/HPSP%20COVID-19%20RESOURCES%20post%203-30-2020_tcm21-425204.pdf (accessed August 15, 2020).
- ⁴⁸ Molfenter T, Brown R, O'Neill A, et al. Use of telemedicine in addiction treatment: current practices and organizational implementation characteristics. *Int J Telemed Appl* 2018;2018:3932643.
- ⁴⁹ Molfenter T, Boyle M, Holloway D, et al. Trends in telemedicine use in addiction treatment. *Addict Sci Clin Pract* 2015;10:14.
- ⁵⁰ Ries RK, Fiellin DA, Miller SC, et al. The ASAM Principles of Addiction Medicine. 5th Edition. Philadelphia, PA: Lippincott Williams & Wilkins 2014.
- ⁵¹ Gentry MT, Lapid MI, Clark MM, et al. Evidence for telehealth group-based treatment: a systematic review. *J Telemed Telecare* 2019;25:327-342.
- ⁵² Kelly JF, Humphreys K, Ferri M. Alcoholics anonymous and other 12-step programs for alcohol use disorder. *Cochrane Database Syst Rev* 2020;3:CD012880.
- ⁵³ Martinotti G, Alessi MC, Di Natale C, et al. Psychopathological burden and quality of life in substance users during the COVID-19 lockdown period in Italy. *Front Psychiatry* 2020;11:572245. <https://doi.org/10.3389/fpsy.2020.572245>
- ⁵⁴ Donati MA, Cabrini S, Capitanucci D, et al. Being a gambler during the COVID-19 pandemic: a study with Italian patients and the effects of reduced exposition. *Int J Environ Res Public Health* 2021;18:424. <https://doi.org/10.3390/ijerph18020424>
- ⁵⁵ Becker WC, Fiellin DA. When epidemics collide: coronavirus disease 2019 (COVID-19) and the opioid crisis. *Ann Intern Med* 2020;173:59-60. <https://doi.org/10.7326/M20-1210>
- ⁵⁶ Simeone R. Doctor shopping behavior and the diversion of prescription opioids. *Subst Abuse* 2017;11:1178221817696077. <https://doi.org/10.1177/1178221817696077>
- ⁵⁷ Kawohl W, Nordt C. COVID-19, unemployment, and suicide. *Lancet Psychiatry* 2020;7:389-90. [https://doi.org/10.1016/S2215-0366\(20\)30141-3](https://doi.org/10.1016/S2215-0366(20)30141-3)
- ⁵⁸ Klomek AB. Suicide prevention during the COVID-19 outbreak. *Lancet Psychiatry* 2020;7:390. [https://doi.org/10.1016/S2215-0366\(20\)30142-5](https://doi.org/10.1016/S2215-0366(20)30142-5)