



# Substance use, mental disorders and COVID-19: a volatile mix

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## Purpose of review

The COVID-19 pandemic and associated restrictions have uniquely and disproportionately affected vulnerable populations. This review summarizes recent evidence on the relationship between psychiatric disorders, substance use disorders and COVID-19, highlighting acute and long-term risks, pharmacotherapy interactions and implications regarding appropriate and timely evidence-based treatment.

## Recent findings

Evidence points to a complex relationship between psychiatric and substance use disorders and COVID-19. A range of risk factors associated with psychiatric and substance use disorders increases the risk of exposure to, and complications arising from, the COVID-19 virus. COVID-19 infection has been indicated as having acute and potential long-term impacts on both psychiatric and substance use disorders. Social disruption associated with restrictions imposed to curb transmission has also been identified as a risk factor for new onset of disorders and recurrence and exacerbation of existing conditions.

## Summary

Early recognition and intervention are key to preventing chronic disability associated with psychiatric disorders, substance use disorders, and their co-occurrence. It is critical that those most in need of services do not fall through the cracks of our healthcare systems. The pandemic has fast tracked the opportunity for widespread implementation of digital health interventions but ensuring these are accessible and available to all, including our most vulnerable, will be a critical task for our future health and social ecosystems.

## Keywords

comorbidity, COVID-19, evidence-based treatment, mental disorders, substance use

## INTRODUCTION

For more than 12 months, the coronavirus disease 19 (COVID-19) has been wreaking havoc across the globe, pushing healthcare systems beyond the limits of their capacity. By the first week of February 2021, just 13 months after COVID-19 was first identified, more than 104 million cases had been reported worldwide, in over 190 countries, with almost 2.3 million deaths [1,2]. From the earliest stages of the pandemic, there have been concerns about the potential impact of the virus on vulnerable populations, that is people who are disproportionately exposed to risk [3]. The past year has seen an explosion of commentary, and more recently, new evidence focusing on population groups at disproportionate risk of COVID-19-related complications, including people with psychiatric disorders and people with substance use disorders. Individually, each of these conditions are associated with a range of risk factors, including physical health comorbidities, that increase risk of exposure to,

and complications arising from, the COVID-19 virus [4<sup>\*\*\*</sup>]. For individuals with both conditions, these problems are likely to be compounded. This review is based on a search of the PsycINFO database conducted in January 2021, designed to capture studies published in English which focused on the relationship between substance use, mental disorders and COVID-19 since the emergence of the disease. Forward and backward searches of key studies were

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## KEY POINTS

- COVID-19 and the associated restrictions have uniquely and disproportionately impacted vulnerable populations, particularly people with psychiatric and substance use disorders.
- Risk factors associated with psychiatric and substance use disorders increase the risk of exposure to, and complications arising from, the COVID-19 virus.
- Both the COVID-19 infection itself and the social disruption associated with restrictions have been identified as risk factors for new onset of disorders and recurrence and exacerbation of existing conditions.
- COVID-19 has provided the opportunity for rapid and widespread implementation of digital and telehealth interventions, but it is critical to ensure these are accessible and available to our most vulnerable.

conducted to identify relevant research studies and reviews. The current review synthesizes these key findings that have emerged over the past year with reference to the unique impact of COVID-19 in relation to psychiatric and substance use disorders, including acute and long-term risks, multimorbidity, pharmacotherapy interactions; challenges and opportunities regarding access to, and the provision of, appropriate and timely evidence-based treatment.

### ACUTE AND LONG-TERM EFFECTS OF COVID-19 INFECTION, PSYCHIATRIC AND SUBSTANCE USE DISORDERS

COVID-19 is a complex multisystem disease. Evidence is emerging that COVID-19 not only impacts the respiratory system but also impacts the neurological, cardiovascular, renal, gastrointestinal, musculoskeletal and haematological systems [5]. Evidence regarding the long-term consequences that may be experienced following recovery from acute infection is also growing [6,7]. In addition to research on physiological effects, there has been an increasing focus in the literature on the acute and potential long-term impact of COVID-19 on psychiatric and substance use disorders, including suicidal ideation, psychosis, anxiety, depression [8].

Current evidence suggests lower mental health quality, elevated anxiety and depression and post-traumatic stress disorder (PTSD) in individuals who have recovered from acute COVID-19 [4<sup>11</sup>,9]. In a recent US cohort analysis, close to one in five (18.1%) COVID-19 survivors were found to have received a psychiatric diagnosis within 3 months of their COVID-19 diagnosis, including 5.8% that

were new-onset conditions. Indeed, the risk of being newly diagnosed with a psychiatric disorder was more than twice that of other health events [4<sup>11</sup>]. Early recognition and intervention are crucial to ensure we do not have a significant increase in the number of people experiencing mental health problems, making them vulnerable to other poor health outcomes including substance use disorders.

This same cohort analysis found that individuals with a past 12-month or past 3-year diagnosis of psychiatric disorder were at 65 and 80% greater risk of being diagnosed with COVID-19, respectively, compared with those who did not have psychiatric diagnoses [4<sup>11</sup>]. These findings suggest that the presence of psychiatric disorder may increase both the proximal and more distal risk of infection. It is unclear why the risk is elevated among these groups; however, behavioural and socioeconomic factors (such as noncompliance with COVID-19 restrictions), physical health comorbidities and smoking have been posited [4<sup>11</sup>].

In addition to the direct impact of COVID-19 infection on individuals, the response to the COVID-19 pandemic itself can potentially have long-term effects. More than 180 countries have implemented a variety of restrictions in attempts to slow the rate of transmission and reduce the impact on overburdened healthcare systems [10,11]. Responses have included physical distancing, partial or full lockdowns, school and workplace closures, cancellation of public events and social gatherings, mandating face masks, restricting domestic and international travel, as well as widespread testing and contact tracing [10,11]. Although restrictions have been vital in reducing the spread of the virus and saving countless lives, the concomitant economic and social impacts have been considerable [4<sup>11</sup>,12<sup>13</sup>,14<sup>15</sup>,15]. The significant social disruption places individuals at further risk of poor mental health, and has left those with preexisting psychiatric conditions (who are already vulnerable), at an increased risk of isolation, with evidence of the amplification of existing mental health issues [16].

Although COVID-19 and associated restrictions have disproportionately affected marginalised population groups, reports from Australia's First Nations' response may be the exception. First Nations people are at an increased risk of contracting COVID-19 and experiencing COVID-19 related complications due to higher rates of smoking and multiple chronic diseases than non-Indigenous Australians [17–20]. Despite these risk factors, and despite First Nations people representing 3.3% of the Australian population, the latest available data from Australia's COVID-19 epidemiology report (which included data up to 14 February 2021)

illustrated only 149 cases of COVID-19 among First Nation Australians, representing 0.5% of all Australian cases [17,21]. The avoidance of widespread illness and death is thought to be due to the rapid, collective response led by First Nations health leaders in the very early days of the pandemic. This included the lobbying of all levels of government to close remote communities, help with protective equipment, testing and contact tracing; the provision of staff training, accommodation for homeless people and information via social media; and ensuring culturally appropriate services were implemented by establishing partnerships with government and non-government organizations [18].

### MULTIMORBIDITY, COVID-19-RELATED COMPLICATIONS AND PHARMACOTHERAPY INTERACTIONS

There is clear evidence demonstrating the association between psychiatric and substance use disorders and poor physical health across a number of domains [13<sup>■</sup>,15,22,23<sup>■</sup>,24], all of which increase the risk of contracting COVID-19 and experiencing more severe COVID-19-related complications if infected [22,23<sup>■</sup>,25–27]. High rates of smoking, overweight and obesity, metabolic syndrome, hypertension and cardiovascular disease, alongside confinement in forensic, residential and in-patient facilities, can increase susceptibility to infection and disease [28<sup>■</sup>,29]. Preexisting psychiatric symptoms may be exacerbated due to fear and worry about being infected, social isolation and the lack of connectivity, distressing medical symptoms and death [28<sup>■</sup>,30<sup>■</sup>].

One of the unique challenges for clinicians who are managing and treating COVID-19 among people with psychiatric and substance use disorders, and particularly those with comorbid conditions, is the complexities surrounding the well tolerated prescribing of pharmacotherapies. A recent review highlighted potential safety risks associated with interactions between COVID-19 treatments and psychiatric medications and pharmacotherapies for substance use disorders, including selective serotonin reuptake inhibitors (SSRIs), serotonin–norepinephrine reuptake inhibitors (SNRIs), tricyclic antidepressants (TCAs), antipsychotics, mood stabilizers, benzodiazepines, methadone and bupropion. Safety risks include respiratory distress, cardiovascular events, infections, coagulation and delirium [30<sup>■</sup>]. Although there is evidence highlighting the dangers associated with interactions between medications, the dearth of data makes drawing conclusions regarding the magnitude of risk difficult [30<sup>■</sup>]. Despite this uncertainty, general

guidance on well tolerated prescribing includes close monitoring of any risk interactions; assessing psychotropic-related risk of respiratory depression and cardiovascular events; and the provision of psychosocial interventions [28<sup>■</sup>,30<sup>■</sup>,31]. Further, an online ‘Interaction Checker’, containing information on potential interactions between pharmacotherapies and COVID-19 experimental agents, has been developed to assist clinicians [32].

### COVID-19 AND ALCOHOL AND OTHER DRUG-RELATED HARMS

People with substance use disorders often experience higher rates of homelessness, unstable or higher density housing, incarceration and social disadvantage compared with the general population, all of which can increase the risk of COVID-19 transmission [22,27,33]. The provision of sterile injecting equipment to people who inject drugs remains critical, yet many needle and syringe exchange programs have had difficulties delivering their usual services [34<sup>■</sup>,35], resulting in some people reusing, or sharing injecting equipment [33].

Physical distancing is at the forefront of the global public health response to COVID-19, yet it may inadvertently increase the risk of serious drug-related harms. General public health guidance recommends people who use drugs never do so alone, with another person available to respond and call emergency services in the event of an overdose or other adverse event [34<sup>■</sup>,36,37<sup>■</sup>]. The implications of conflicting guidance may force a choice between wanting to avoid potential exposure to COVID-19, adhering to government orders and using drugs safely [34<sup>■</sup>,36].

Loneliness, self-isolation, financial and economic stress may also lead to an exacerbation of psychiatric disorders (such as depression, anxiety, self-harm and suicidal ideation), which are highly prevalent among people with substance use disorders [38]. These circumstances may also present the ideal risk factors for someone who had stopped using substances to experience a lapse or relapse, or increase patterns of current use to ‘self-medicate’ psychiatric symptoms [39–41]. Existing psychiatric conditions may be further exacerbated by reduced access to substances. Supply shortages, due in part to international travel restrictions, may also lead some people to source illicit substances in particular from unfamiliar and untrusted providers, increasing the risk of exposure to contaminated supplies [34<sup>■</sup>,41,42]. The inability to access substances may lead to withdrawal, the symptoms of which (fever, sweats, fatigue, aches and pains) could be mistaken for COVID-19 and vice versa [23<sup>■</sup>].

Conversely, the classification of alcohol as an 'essential' commodity in many countries around the world has led to its increased availability through home delivery and advertising, including targeted COVID-19 advertising [13<sup>■</sup>,43,44]. The financial, economic and social stressors caused by COVID-19 and associated restrictions are likely to be exacerbated by increased consumption of alcohol at home, compounding the risk of experiencing or being exposed to domestic, family and intimate family violence, child neglect, heavier drinking, underage consumption, serious or traumatic injury, and death [43–45,46<sup>■</sup>,47].

### CHALLENGES AND OPPORTUNITIES FOR THE PROVISION OF EVIDENCE-BASED TREATMENT

Despite evidence that the COVID-19 pandemic has exacerbated psychiatric and substance use symptoms, the ability of services and practitioners to provide, and patients to access, treatment has been limited by public health responses introduced in efforts to reduce the transmission of COVID-19. With healthcare systems under pressure and under resourced, there is the risk that people with chronic co-occurring psychiatric and substance use disorders may be even more marginalized by a health system prioritizing the urgency of COVID-19 patients [15,48]. Patients with these disorders may find it difficult to continue current treatment, access medications or attend new treatment if symptoms recur or become exacerbated with some services not accepting new patients [15,33,41,49,50<sup>■</sup>,51<sup>■</sup>]. In a cross-sectional study conducted among clinical and community youth cohorts in Canada in April 2020, participants reported having difficulty accessing mental health services [52<sup>■</sup>]. Types of services that were identified as being unavailable included therapy/counselling, substance use and psychiatric services. At a service level, one qualitative study conducted among 18 opioid substitution therapy (buprenorphine) prescribers in the US found many were reluctant to accept new patients or treat those who did not have a prior history with the service [50<sup>■</sup>]. It is ironically those who need services the most who are most likely to fall through the cracks of health systems. In addition to services and clinicians lacking the capacity and resources to provide care to patients, there is the added challenge of how to address fear of exposure to infection preventing some patients from attending appointments [31,53]. No studies examining access to telehealth among disadvantaged patients were identified, nor were any accounts of patients' experience using telehealth services.

Rapid changes have been made in services worldwide, in attempts to ensure continued provision of opioid substitution therapies. In North America, new regulations allow for pharmacists to adjust opioid substitution therapy doses, and several countries, including Australia, have relaxed restrictions regarding take-home doses [23<sup>■</sup>,53]. Although rapid modifications have been necessary in attempts to minimize potential disruptions to treatment, it is vital that any changes are implemented within a coordinated care approach. For example, pharmacists communicating any dosage adjustments back to prescribing doctors, and taking the time to speak to patients about any implications arising from increase/decrease in dosages, such as contraindications or interactions with other pharmacotherapies and/or medications.

It has been recommended in Australia that longer-acting depot formulations of buprenorphine replace daily methadone/buprenorphine dosing, and potentially be provided to those at risk of overdose or dose diversion (e.g. stockpiling takeaway doses, using all doses quickly and supplementing with other opioids) [23<sup>■</sup>,33]. The provision of buprenorphine-naloxone in place of buprenorphine to minimize use by injection has also been recommended, alongside take-home naloxone [23<sup>■</sup>].

The pandemic has fast tracked the opportunity for upscaling the use of digital health interventions. Telehealth, comprising computerised, web and telephone-based medicine, has the potential to overcome many barriers preventing access to, and provision of healthcare services for people with psychiatric and substance use disorders. These include providing access to those afraid of exposure to infection; people living in rural or remote locations; improving continuity of care; with flexibility for both providers and patients who can provide and access care wherever most convenient; at reduced cost [42]. Despite numerous advantages, there has been concern about the identification of high-risk situations (e.g. self-harm, suicidal ideation) via computer or telephone, where the assessment of a person's mental state and general behaviour is critical [54]. Other practical and logistical challenges include the need for access to a smartphone and phone credit, computer and stable internet coverage, as well as a well tolerated and private therapeutic space in which patients can engage in treatment [33,54]. Lack of equal access to technology required for engaging in telehealth, and challenges finding available technology during COVID-19 restrictions (e.g. via public libraries and other shared spaces) makes providing equal care difficult [51<sup>■</sup>,54]. The implementation of an e-mental health ecosystem that delivers to all will take some time, but ensuring

that digital health interventions are accessible and available for all, including our most vulnerable, will be a critical task for our future health systems and essential to full utilisation of digital technologies.

## IMPLICATIONS FOR CLINICIANS, SERVICE PROVIDERS AND GOVERNMENTS

The COVID-19 pandemic has driven dramatic global shifts in all areas of life, and healthcare systems will never be the same. The rapid change has also presented novel opportunities to explore different models and think differently about how to best provide evidence-based care to those who are uniquely and disproportionately affected by the pandemic and subsequent restrictions. Despite the development and current roll out in many countries of vaccines, there is general consensus that the virus will be with us, and need to be managed, for a long time. An ongoing response is needed that continues to monitor and model the impact of COVID-19 and associated societal changes on substance use and psychiatric health at national and local levels. Such evidence is critical to informing health and social ecosystems, and improving service capacity, linkage and coordination.

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## Conflicts of interest

There are no conflicts of interest.

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