

It is illegal to post this copyrighted PDF on any website. Perspectives on the COVID-19 Pandemic and Individuals With Serious Mental Illness

Ann K. Shinn, MD, MPH,^{a*} and Mark Viron, MD^b

Just over a month ago, the World Health Organization declared coronavirus disease 2019 (COVID-19)—the disease caused by the severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2)—a global pandemic.¹ The scale of disruption that the COVID-19 pandemic has had on society has been massive and unprecedented. As of April 16, 2020, the coronavirus has infected more than 2 million people and claimed the lives of 144,341 worldwide.² The statistics in the US alone (668,174 cases, 33,931 deaths)²—which now overshadow those in the first epicenters such as China, South Korea, Italy, and Spain—are sobering.

The major public health focus at the start of the pandemic was to “flatten the curve,” or slow the rate of COVID-19 transmission, with a particular emphasis on protecting the elderly, the immunocompromised, and those with respiratory and other medical conditions that placed them at higher risk of more severe outcomes if infected. However, as we enter the second month of the COVID-19 shutdown and contend with the idea of a new “normal,” the impact of the COVID-19 crisis on other vulnerable populations, including individuals with serious mental illness (SMI) such as schizophrenia and bipolar disorder, shifts into greater focus.

Impact of the Coronavirus on People With SMI

Potentially higher risk of coronavirus exposure and infection. Schizophrenia and bipolar disorder are associated with cognitive deficits, including executive dysfunction.³ In addition, people with SMI comprise a disenfranchised group,⁴ with lower educational attainment^{5,6} and health literacy,⁷⁻⁹ on average, compared to the general population. Such factors may make it harder for people with SMI to find accurate information about COVID-19 and to organize, appraise, and translate health information into behavior that reduces risk of exposure and infection. This is especially true given the speed and constantly evolving nature of new information and guidance about COVID-19, as well as the troubling amount of “noise” in the form of misleading or

false information circulating in social media and even some mainstream news outlets.¹⁰

Negative health-related behaviors may also increase infection risk in SMI. Some studies suggest that SMI patients may have lower rates of adherence to treatment for medical conditions^{11,12} (though data are mixed; see, eg, Kreyenbuhl et al¹³). Thus, it is possible that patients, especially those who are more acutely ill, may have a harder time complying with protective hygiene measures, stay-at-home orders, and other health guidance during this pandemic. Tobacco use is another adverse health-related behavior that is much more common in SMI (64% in schizophrenia and 44% in bipolar disorder vs 19% in individuals without psychiatric illness).¹⁴ Contact with virus-contaminated fomites is one of the mechanisms of coronavirus infection, and the act of smoking, which involves the hands and possibly contaminated cigarettes and other smoking apparatus coming in frequent contact with the mouth, may elevate risk. In addition, the coronavirus uses the angiotensin converting enzyme II (ACE-2) receptor to gain entry into cells and cause active infection,^{15,16} and it was recently found that smokers have higher expression of ACE-2 in bronchial epithelial cells compared to nonsmokers and former smokers.¹⁷ The higher ACE-2 levels in the airways of smokers is thought to predispose smokers to coronavirus infection.

Finally, individuals with SMI face greater risk of coronavirus exposure and infection because of structural barriers that can hinder their ability to successfully quarantine at home. SMI is associated with higher rates of homelessness and unstable housing.¹⁸ According to one estimate, 20% of schizophrenia and 17% of bipolar disorder patients are homeless.¹⁹ These numbers suggest that a disproportionate number of patients with SMI may lack the basic necessity of a safe and secure location in which to practice social distancing. Furthermore, for patients residing in communal settings, such as shelters, psychiatric units, and group homes, there can be heightened risk of contagion, as occurred in South Korea, where 101 of 103 patients in a psychiatric unit contracted COVID-19 and 7 died.²⁰ Similarly, in New York, people with disabilities living in group homes were found to be 5.3 times more likely than the general population to develop COVID-19 and 4.9 times more likely to die from it.²¹ Psychiatric units and other behavioral health settings are often designed to facilitate social interactions, with patients and staff interacting in close quarters. In contrast to medical floors, psychiatric units are less likely to be equipped with personal protective equipment (PPE), and staff may have less prior training and experience in infection control practices. These factors, compounded by the worldwide shortage of

^aPsychotic Disorders Division, McLean Hospital/Harvard Medical School Department of Psychiatry, Belmont, Massachusetts

^bAdvocates, Inc, Framingham, Massachusetts

*Corresponding author: Ann K. Shinn, MD, MPH, McLean Hospital, 115 Mill St, ABS351, Mailstop 108, Belmont, MA 02478 (akshinn@partners.org).

J Clin Psychiatry 2020;81(3):20com13412

To cite: Shinn AK, Viron M. Perspectives on the COVID-19 pandemic and individuals with serious mental illness. *J Clin Psychiatry*. 2020;81(3):20com13412.

To share: <https://doi.org/10.4088/JCP.20com13412>

© Copyright 2020 Physicians Postgraduate Press, Inc.

PPE and the ongoing difficulty of accessing testing, create daunting challenges for congregate care settings, where coronavirus infection in just one patient or staff member could spread rapidly and have life-threatening consequences.

Likelihood of poorer outcomes from COVID-19. The coronavirus causes severe illness—with complications such as pneumonia, acute respiratory distress syndrome, septic shock, and acute kidney injury—in approximately 16% of cases, according to data from early in the pandemic.²² Severe cases are associated with the presence of coexisting conditions, such as diabetes, hypertension, cardiovascular disease, chronic obstructive pulmonary disease (COPD), immunodeficiency, and cancer.²² Even without factoring COVID-19 into the calculation, SMI patients already have a mortality rate that is 3.7 times that of the general population, with the excess deaths largely attributable to cardiovascular and respiratory diseases.²³ Factors related to both illness (eg, physical inactivity due to negative symptoms) and treatment (ie, metabolic disturbances caused by atypical antipsychotic medications²⁴) increase rates of cardiovascular disease and diabetes in patients with SMI. Tobacco use also causes lung disease and reduced lung capacity, increasing the risk of more serious illness. Even before COVID-19, the incidence of pneumonia was higher in schizophrenia,²⁵ and associated with antipsychotic medications^{26,27} and tobacco use, among other factors. Furthermore, clozapine, which is the antipsychotic reserved for treatment-resistant schizophrenia patients, can suppress immune function and increase susceptibility to infections like pneumonia.

The reasons why underlying medical conditions cause more severe COVID-19 illness are not yet fully understood, but ACE-2, the receptor to which SARS-CoV-2 binds to cause infection, are highly expressed in the heart and lungs.²⁸ The coronavirus is thought to cause acute injury to alveolar and myocardial cells,²⁹ which may already be compromised in cardiovascular and respiratory diseases. The use of ACE-inhibitor antihypertensive medications, which up-regulate ACE-2, may also play a role in increasing the severity of infections.²⁹ Whatever the mechanism, the high rate of smoking and comorbid medical conditions in SMI, in combination with the medications routinely used to treat SMI, may create a perfect storm for COVID-19 complications.

Worse outcomes may also result from delays in getting treatment. SMI patients tend to present for medical attention much later in the course of disease. Difficulty recognizing and effectively reporting physical symptoms—whether due to reduced pain sensitivity,³⁰ anosognosia (impaired awareness of illness), cognitive and motivational impairments, delusional interpretations about the body, and/or denial^{31,32}—may contribute. In addition, SMI patients tend to have less financial and other resources, live in poorer neighborhoods with less favorable patterns of use and access to care,³³ and receive lower quality medical care.³⁴ Unfortunately, in the case of such a highly transmissible virus like SARS-CoV-2, delays in diagnosis and treatment not only impact the health of the affected individual but also have ramifications for public health.

Impact of the Public Health Response on People With SMI

The massive changes in society in response to the COVID-19 crisis—eg, the mandated closure of schools and businesses, and the sight of normally busy urban areas relatively empty of cars and pedestrians—are unsettling and surreal. For people with psychotic disorders, the current circumstances may exacerbate feelings of perplexity, anxiety, and paranoia and may also become integrated into the content of delusions. The lack of clear and consistent messages from the federal and some state governments add to the effects of social media misinformation campaigns and further contribute to confusion and instability in day-to-day life. So much is unknown not only about the new SARS-CoV-2 and the ultimate toll it will exact on human life but also about the scope and duration of mitigation efforts, which continue to be moving targets. The pervasive uncertainty about what to expect and how long the shutdown will last is a major source of distress for many.

While social distancing is necessary to protect public health, it can also have unintended effects. A subset of SMI patients may be less impacted by public health restrictions, having lived “socially distanced” lives for years, with minimal contacts outside of their immediate environment and necessities, whether as a result of symptoms, societal marginalization, or personal choice. But for many others with SMI, isolation measures further reduce and collapse social networks, which are often already tenuous. Social distancing limits access to treatment and support centers, including mental health providers, day programs, clubhouses, and peer-run respites. People in congregate care settings as well as their families and loved ones are now enduring increasingly prohibitive visitor policies. Simple but meaningful daytime routines such as visiting a favorite coffee shop, restaurant, or the library are now impossible.

Finally, the economic toll of the shutdown may be more pronounced for people with SMI. From mid-March to mid-April of this year, over 20 million Americans claimed unemployment.³⁵ People with SMI are more likely to have jobs that do not provide health benefits or paid sick leave and that are more vulnerable to layoffs and furloughs during the COVID-19 shutdown. While there are now talks about reopening the economy in certain states, the emotional, social, health, and financial impacts of this pandemic could act as traumas with enduring effects that will need continued attention even after the shutdown ends.

Impact of Changes in Health Care Delivery

In response to the pandemic, community-based behavioral health providers have been forced to shift from in-person, face-to-face services to “virtual” visits done by telephone or videoconference. This seismic shift in the landscape of behavioral health care has significant implications for people with SMI. Telehealth approaches have enabled ongoing access to vital services while helping to limit the spread of the virus. Telehealth has generally been found to be feasible and effective in treating mental illness and acceptable to people with SMI.^{36,37} Mobile

It is illegal to post this copyrighted PDF on any website.

phone ownership (including smartphones) is increasingly common in all populations, including people with SMI, and evidence suggests that concerns regarding patients' ability and comfort using such technology may be unfounded.³⁸ Still, there will be individuals who will have difficulty or discomfort conveying information by telephone or videoconference. And while videoconferencing can improve the relational connection, there is a sense of "with-ness" that is lost in virtual interactions, and this phenomenon may disproportionately affect people who historically struggle to engage with their treaters. Issues of access and equity will come into play, as some people will not have the resources to obtain phone or Internet service, may lack enough minutes or data on their plans, or may not have the tech-literacy to participate in a video call without assistance. Other access issues to consider include the need to have workflows and technology that allow for the proper use of interpreters, including those for deaf and hard of hearing populations.

Like many others, people with SMI may forgo needed care out of fear of contracting the coronavirus in settings such as emergency departments, hospitals, outpatient laboratories, and pharmacies. Providers may need to reconsider the necessity and frequency of routine laboratory work in order to limit potential community exposure to the virus. Risk-benefit discussions will need to be undertaken with patients in order to assess the value of current monitoring protocols in the setting of a pandemic. The US Food and Drug Administration has released guidance highlighting flexibility in clozapine monitoring requirements during the COVID-19 public health emergency.³⁹ To ensure medication adherence is not interrupted, patients may need assistance setting up home deliveries from pharmacies. The administration of long-acting injectable medications may also become challenging due to staffing issues and inadequate PPE, necessitating creative problem-solving and possible return to oral medication for a period of time.

Conclusions and Recommendations

The COVID-19 pandemic presents challenges for us all. However, people with SMI may face even greater challenges due to the multiplicity of factors that put these individuals at risk for coronavirus infection and complications, as well as the massive impact of public health measures and associated changes in mental health care delivery. These factors are likely additive and make an already marginalized segment of society even more vulnerable. There is no doubt that this pandemic is causing devastation worldwide, but the pandemic arguably does more to expose problems that already exist. According to historian and writer Frank M. Snowden, epidemics like the coronavirus are "a mirror for humanity."⁴⁰ He writes, "Epidemic diseases are not random events that afflict societies capriciously and without warning. On the contrary, every society produces its own specific vulnerabilities."⁴⁰ In the case of people with SMI, what is reflected is the profile of a vulnerable population in a health care system that is highly fragmented.

What can we do about this? First, we need to creatively and actively engage and strengthen partnerships with patients, whether through virtual encounters or in-person with the protection of PPE (eg, for congregate care settings) during this period of social distancing. Patients may need increased support to cope with the stress and uncertainty of the pandemic and to manage any exacerbation of symptoms. Importantly, we need to ensure that patients receive clear and accurate information and education about COVID-19 and how to protect themselves and those around them from disease transmission. Health information needs to be presented and represented in clear and accessible ways, tailored to individual strengths and limitations.

Until vaccines become available, close monitoring of physical health and increased access to testing will be critical, while recognizing that treaters may need to advocate for their patients in order to secure appropriate COVID-19 testing. Those living in congregate care settings will need to be supported by staff who have been trained to monitor for signs and symptoms of COVID-19, including the identification of symptoms requiring emergent attention. People with unstable housing will need suitable accommodations to ensure the safety and health of themselves and others. People who are unable or unwilling to follow public health guidance and restrictions such as quarantine or isolation will pose special challenges to the system of care, necessitating supportive and individualized approaches that will hopefully avoid more restrictive or drastic measures that could be undertaken in order to protect the health of the individual and public.

Given the likely increased risks of negative outcomes from COVID-19, as well as the difficulty some individuals have in recognizing and communicating physical symptoms or health needs, people with SMI who are at risk for or have been diagnosed with COVID-19 may need closer medical monitoring if quarantining or isolating outside of a hospital setting. In all these efforts, close collaboration between psychiatry, primary care, and other medical services is needed to reduce poor clinical outcomes in this vulnerable population.

Second, the health care system, and society more generally, needs to not only deal with issues related to COVID-19 but also address the deeper challenges and disparities that people with SMI face. We need to help patients achieve better health outcomes through smoking cessation, improved diet and exercise, more effective medications with better side effect profiles, better access to quality health care, more stable housing, safer neighborhoods, and improved educational and vocational opportunities to increase social capital. We recognize that these goals are ambitious and unlikely to occur overnight. However, if we can use the current crisis to initiate sweeping change, as many clinics and hospitals have been able to do with the rapid transition to telehealth, we may find ourselves facing a less troubling situation in the "mirror" if and when another pandemic occurs.

Last but not least, we need to better understand some of the unique issues facing this population and stay vigilant regarding consequences of our actions or inactions in the months ahead. This will require going beyond making conjectures about potential risks, as we do in this commentary, to collecting data to measure the actual health, emotional, social, and economic impacts of the COVID-19 pandemic on people with SMI.

Received: April 20, 2020.

Published online: April 28, 2020.

Potential conflicts of interest: None.

Funding/support: None.

REFERENCES

1. Coronavirus disease (COVID-19) outbreak. WHO characterizes COVID-19 as a pandemic. World Health Organization website. <https://who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen>. March 11, 2020.
2. Coronavirus Worldometer. Worldometer website. <https://www.worldometers.info/coronavirus/>. Accessed April 16, 2020.
3. Sheffield JM, Karcher NR, Barch DM. Cognitive deficits in psychotic disorders: a lifespan perspective. *Neuropsychol Rev*. 2018;28(4):509–533.
4. Hakulinen C, Elovainio M, Arffman M, et al. Employment status and personal income before and after onset of a severe mental disorder: a case-control study. *Psychiatr Serv*. 2020;71(3):250–255.
5. Isohanni I, Jones PB, Järvelin MR, et al. Educational consequences of mental disorders treated in hospital: a 31-year follow-up of the Northern Finland 1966 Birth Cohort. *Psychol Med*. 2001;31(2):339–349.
6. Tempelaar WM, Termorshuizen F, MacCabe JH, et al. Educational achievement in psychiatric patients and their siblings: a register-based study in 30,000 individuals in The Netherlands. *Psychol Med*. 2017;47(4):776–784.
7. Dickerson FB, Goldberg RW, Brown CH, et al. Diabetes knowledge among persons with serious mental illness and type 2 diabetes. *Psychosomatics*. 2005;46(5):418–424.
8. Dickerson FB, Kreyenbuhl J, Goldberg RW, et al. A 5-year follow-up of diabetes knowledge in persons with serious mental illness and type 2 diabetes. *J Clin Psychiatry*. 2009;70(7):1057–1058.
9. Kim SW, Park WY, Jhon M, et al. Physical health literacy and health-related behaviors in patients with psychosis. *Clin Psychopharmacol Neurosci*. 2019;17(2):279–287.
10. Jurkowitz M, Mitchell A. Early in outbreak, Americans cited claims about risk level and details of coronavirus as made-up news. Pew Research Center website. <https://www.journalism.org/2020/04/15/early-in-outbreak-americans-cited-claims-about-risk-level-and-details-of-coronavirus-as-made-up-news/>. April 15, 2020.
11. Dolder CR, Lacro JP, Jeste DV. Adherence to antipsychotic and nonpsychiatric medications in middle-aged and older patients with psychotic disorders. *Psychosom Med*. 2003;65(1):156–162.
12. Blixen CE, Kanuch S, Perzynski AT, et al. Barriers to self-management of serious mental illness and diabetes. *Am J Health Behav*. 2016;40(2):194–204.
13. Kreyenbuhl J, Dixon LB, McCarthy JF, et al. Does adherence to medications for type 2 diabetes differ between individuals with vs without schizophrenia? *Schizophr Bull*. 2010;36(2):428–435.
14. Dickerson F, Stallings CR, Origoni AE, et al. Cigarette smoking among persons with schizophrenia or bipolar disorder in routine clinical settings, 1999–2011. *Psychiatr Serv*. 2013;64(1):44–50.
15. Zhou P, Yang XL, Wang XG, et al. A pneumonia outbreak associated with a new coronavirus of probable bat origin. *Nature*. 2020;579(7798):270–273.
16. Lan J, Ge J, Yu J, et al. Structure of the SARS-CoV-2 spike receptor-binding domain bound to the ACE2 receptor [published online ahead of print March 30, 2020]. *Nature*.
17. Leung JM, Yang CX, Tam A, et al. ACE-2 expression in the small airway epithelia of smokers and COPD patients: implications for COVID-19 [published online ahead of print April 8, 2020]. *Eur Respir J*.
18. Ayano G, Tesfaw G, Shumet S. The prevalence of schizophrenia and other psychotic disorders among homeless people: a systematic review and meta-analysis. *BMC Psychiatry*. 2019;19(1):370.
19. Folsom DP, Hawthorne W, Lindamer L, et al. Prevalence and risk factors for homelessness and utilization of mental health services among 10,340 patients with serious mental illness in a large public mental health system. *Am J Psychiatry*. 2005;162(2):370–376.
20. Kim MJ. How a South Korean psychiatric ward became a “medical disaster” when coronavirus hit. *Washington Post*. February 29, 2020. https://www.washingtonpost.com/world/asia_pacific/how-a-south-korean-psychiatric-ward-became-a-medical-disaster-when-coronavirus-hit/2020/02/29/fe8f6e40-5897-11ea-8efd-0f904bdd8057_story.html.
21. Hakim D. “It’s hit our front door”: homes for the disabled see a surge of Covid-19. *New York Times*. April 8, 2020. <https://www.nytimes.com/2020/04/08/nyregion/coronavirus-disabilities-group-homes.html>.
22. Guan WJ, Ni ZY, Hu Y, et al; China Medical Treatment Expert Group for Covid-19. Clinical characteristics of coronavirus disease 2019 in China [published online ahead of print February 28, 2020]. *N Engl J Med*.
23. Olfson M, Gerhard T, Huang C, et al. Premature mortality among adults with schizophrenia in the United States. *JAMA Psychiatry*. 2015;72(12):1172–1181.
24. Newcomer JW. Antipsychotic medications: metabolic and cardiovascular risk. *J Clin Psychiatry*. 2007;68(suppl 4):8–13.
25. Chou FH, Tsai KY, Chou YM. The incidence and all-cause mortality of pneumonia in patients with schizophrenia: a nine-year follow-up study. *J Psychiatr Res*. 2013;47(4):460–466.
26. Haga T, Ito K, Sakashita K, et al. Risk factors for pneumonia in patients with schizophrenia. *Neuropsychopharmacol Rep*. 2018;38(4):204–209.
27. Dzahini O, Singh N, Taylor D, et al. Antipsychotic drug use and pneumonia: systematic review and meta-analysis. *J Psychopharmacol*. 2018;32(11):1167–1181.
28. Turner AJ, Hiscox JA, Hooper NM. ACE2: from vasopeptidase to SARS virus receptor. *Trends Pharmacol Sci*. 2004;25(6):291–294.
29. Zheng YY, Ma YT, Zhang JY, et al. COVID-19 and the cardiovascular system. *Nat Rev Cardiol*. 2020;17(5):259–260.
30. Stubbs B, Thompson T, Acaster S, et al. Decreased pain sensitivity among people with schizophrenia: a meta-analysis of experimental pain induction studies. *Pain*. 2015;156(11):2121–2131.
31. Strauss DH, Spitzer RL, Muskin PR. Maladaptive denial of physical illness: a proposal for DSM-IV. *Am J Psychiatry*. 1990;147(9):1168–1172.
32. Iancu I, Strous R, Poreh A, et al. Psychiatric inpatients’ reactions to the SARS epidemic: an Israeli survey. *Isr J Psychiatry Relat Sci*. 2005;42(4):258–262.
33. Chow JC, Jaffee K, Snowden L. Racial/ethnic disparities in the use of mental health services in poverty areas. *Am J Public Health*. 2003;93(5):792–797.
34. McGinty EE, Baller J, Azrin ST, et al. Quality of medical care for persons with serious mental illness: a comprehensive review. *Schizophr Res*. 2015;165(2–3):227–235.
35. Mutikani L. Coronavirus: over 20 million Americans have now applied for unemployment benefit. World Economic Forum website. <https://www.weforum.org/agenda/2020/04/united-states-unemployment-claimants-coronavirus-covid19>. April 16, 2020.
36. Kasckow J, Felmet K, Appelt C, et al. Telepsychiatry in the assessment and treatment of schizophrenia. *Clin Schizophr Relat Psychoses*. 2014;8(1):21–27A.
37. Bashshur RL, Shannon GW, Bashshur N, et al. The empirical evidence for telemedicine interventions in mental disorders. *Telemed J E Health*. 2016;22(2):87–113.
38. Firth J, Torous J. Smartphone apps for schizophrenia: a systematic review. *JMIR Mhealth Uhealth*. 2015;3(4):e102.
39. Policy for Certain REMS Requirements During the COVID-19 Public Health Emergency: Guidance for Industry and Healthcare Professionals. US Food & Drug Administration website. <https://www.fda.gov/media/136317/download>. March 2020.
40. Chotiner I. How Pandemics Change History. *The New Yorker*. March 3, 2020. <https://www.newyorker.com/news/q-and-a/how-pandemics-change-history>.