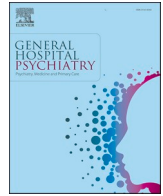




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## Letter to the editor

## Long COVID and the risk of suicide

## ARTICLE INFO

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Long COVID is a major public health issue around the world [1,2]. Multiple definitions of long COVID exist but the bottom line is that long COVID is a persistent syndrome affecting a significant proportion of patients who had acute COVID-19 [1–3]. University of Washington's Institute for Health Metrics and Evaluation research shows that worldwide, nearly 150 million people are estimated to have developed long COVID during the first two years of the pandemic [2]. Even a mild COVID-19 infection can cause long COVID. To be considered as related to long COVID, complaints had to have appeared or worsened since acute COVID-19 infection and to persist after the acute phase of illness.

The clinical spectrum of long COVID is various [1,4]. It includes respiratory, metabolic and neuropsychiatric disorders and pain syndromes. An association between neuropsychiatric complaints and somatic complaints has been observed in patients with long COVID (for example, cognitive complaints and depressed mood with respiratory symptoms) [4].

Depression, anxiety, posttraumatic symptoms, sleep disturbances, fatigue and cognitive deficits are the most frequently reported neuropsychiatric manifestations of long COVID [5]. All these conditions are associated with suicidal ideation and behavior [3,6]. For example, 60% of all individuals who die by suicide have a mood disorder at the time of death. Metabolic and other medical disorders significantly increase suicide risk [7]. For example, diabetes and cardiovascular disorders are associated with elevated risk for suicidal behavior. Also, many studies have shown that chronic pain is an independent risk factor for suicide [8]. Therefore, individuals with long COVID may be at increased risk of suicide. It has also been observed that pre-infection psychosocial distress characterized by depression, anxiety, worry, perceived stress, and loneliness was associated with a substantial increase in the suicide risk among individuals with long COVID [5].

A recent study examined possible association between long COVID, psychiatric symptoms and psychiatric disorders [9]. The authors found that the number of long COVID complaints was higher in patients with significant suicide risk. Respiratory and cognitive complaints and persistent fatigue were more frequent in patients with significant suicide risk than in patients without any psychiatric disorders. The authors also found that cognitive complaints were associated with a significant suicide risk adjusting for age, sex, and ICU stay.

A recent meta-analysis showed that some post-COVID patients experience persistent suicidality [10]. Another recent study found that compared with individuals who did not have COVID, those who had COVID were 46% more likely to have suicidal ideation during the post-acute phase [11]. The presence of suicidal ideation increases suicide risk.

There are very few publications regarding the relation between long COVID and suicide [3,9,10,11]. This issue does not receive sufficient attention. The goal of this note is to draw attention of the medical community to the risk of suicide in individuals with long COVID.

Suicide risk in long COVID may be underappreciated by both mental health and non-mental health medical professionals. Therefore, it is very important to educate medical professionals working with long COVID patients that

- individuals with long COVID may be suicidal,
- persons with long COVID need to be screened for suicidality,
- if necessary, suicide prevention interventions should be implemented.

Families of individuals with long COVID need to be educated that psychiatric symptoms especially, suicidal ideation in long COVID patients should be taken seriously. It is necessary to advise families of long COVID patients to get immediate professional medical help if individuals with long COVID experience suicidal thoughts.

It is vital to educate policy makers and public health administrators that long COVID may be associated with significant psychiatric issues including suicidal ideation and behavior. Sufficient resources need to be allocated to make sure that long COVID patients with psychiatric symptoms receive appropriate mental health care.

## Conflict of Interest

None.

## Data availability

No data was used for the research described in the article.

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## References

- [1] Ceban F, Leber A, Jawad MY, Yu M, Lui LMW, Subramaniapillai M, et al. Registered clinical trials investigating treatment of long COVID: a scoping review and recommendations for research. *Infect Dis (Lond)* 2022 Jul;54(7):467–77. <https://doi.org/10.1080/23744235.2022.2043560>.
- [2] University of Washington's Institute for Health Metrics and Evaluation. WHO: at least 17 million people in the WHO European Region experienced long COVID in the first two years of the pandemic; millions may have to live with it for years to come. URL, <https://www.healthdata.org/news-release/who-least-17-million-people-who-european-region-experienced-long-covid-first-two-years>; September 13, 2022. Accessed: October 9, 2022.
- [3] Sher L. Post-COVID syndrome and suicide risk. *QJM*. 2021 Apr 27;114(2):95–8. <https://doi.org/10.1093/qjmed/hcab007>.
- [4] Efstathiou V, Stefanou MI, Demetriou M, Siafakas N, Makris M, Tsigvoulis G, et al. Long COVID and neuropsychiatric manifestations (Review). *Exp Ther Med* 2022 May;23(5):363. <https://doi.org/10.3892/etm.2022.11290> [Epub 2022 Apr 1].
- [5] Wang S, Quan L, Chavarro JE, Slopen N, Kubzansky LD, Koenen KC, et al. Associations of depression, anxiety, worry, perceived stress, and loneliness prior to infection with risk of post-COVID-19 conditions. *JAMA. Psychiatry*. 2022 Sep 7. <https://doi.org/10.1001/jamapsychiatry.2022.2640>. e222640. [Epub ahead of print].
- [6] Sher L. Resilience as a focus of suicide research and prevention. *Acta Psychiatr Scand* 2019 Aug;140(2):169–80. <https://doi.org/10.1111/acps.13059> [Epub 2019 Jun 20].
- [7] Ahmedani BK, Peterson EL, Hu Y, Rossom RC, Lynch F, Lu CY, et al. Major physical health conditions and risk of suicide. *Am J Prev Med* 2017 Sep;53(3):308–15. <https://doi.org/10.1016/j.amepre.2017.04.001> [Epub 2017 Jun 12].
- [8] Racine M. Chronic pain and suicide risk: a comprehensive review. *Prog Neuropsychopharmacol Biol Psychiatry* 2018 Dec 20;87(Pt B):269–80. <https://doi.org/10.1016/j.pnpb.2017.08.020> [Epub 2017 Aug 26].
- [9] Gasnier M, Choucha W, Radiguer F, Faulet T, Chappell K, Bougarel A, et al. Comorbidity of long COVID and psychiatric disorders after a hospitalisation for COVID-19: a cross-sectional study. *J Neurol Neurosurg Psychiatry* 2022 Aug 11. <https://doi.org/10.1136/jnnp-2021-328516>. jnnp-2021-328516. [Epub ahead of print].
- [10] Mehta N, Patel A, Patel N, Ortiz JF, Khurana M, Urhoghide E, et al. Long-term neurological sequelae among severe COVID-19 patients: a systematic review and meta-analysis. *Cureus*. 2022 Sep 28;14(9):e29694. <https://doi.org/10.7759/cureus.29694>.
- [11] Xie Y, Xu E, Al-Aly Z. Risks of mental health outcomes in people with covid-19: cohort study. *BMJ*. 2022 Feb 16;376:e068993. <https://doi.org/10.1136/bmj-2021-068993>.

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