

# Patients with PTSD are less likely to survive COVID than those without, finds new research

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A new study shows that patients with COVID-19 who also had post-traumatic stress disorder (PTSD) were more likely to die or be

hospitalized than those without a psychiatric disorder. For patients with other mental illnesses, the risks were substantially higher.

Researchers from UC San Francisco and the San Francisco VA Health Care System have found that veterans with PTSD had an 8% increased risk of death if they had COVID and a 9% increased risk of hospitalization, compared with [patients](#) with the virus and without a psychiatric diagnosis, adjusting for age, sex, race and co-occurring medical conditions.

The researchers also quantified the risks for patients with other psychiatric disorders, corroborating findings from other studies. Those with psychosis had a 58% increased risk of death and a 66% increased risk of hospitalization, relative to those without psychiatric diagnoses, the researchers reported in their study, publishing in *Translational Psychiatry* on Nov. 22, 2022.

For those with [bipolar disorder](#), the increased risks of death and hospitalization were 29% and 46%, respectively; and for major depression, they were 13% and 21%, respectively.

Led by first author Kristen Nishimi, Ph.D., of the UCSF Department of Psychiatry and Behavioral Sciences, and the Mental Health Service at the San Francisco VA Health Care System, the researchers tracked data from more than a quarter a million veterans enrolled in the United States Department of Veterans Affairs' [health care services](#), who had tested positive for COVID between February 2020 and August 2021, with most cases occurring prior to the vaccine. In total, 6% of the veterans had died and 15% had been hospitalized within 60 days of testing positive.

The average age of the veterans was 60 and 90% were male. Some 26% had PTSD and a further 28% had a different psychiatric diagnosis.

To eliminate the effects of any confounding variables, the researchers compared veterans with each mental health disorder to veterans without a psychiatric disorder, adjusting for age, gender, race and ethnicity. Additionally, they were adjusted for co-occurring medical conditions, including diabetes, cancer and HIV, and cardiovascular, lung, kidney and liver diseases, as well as by factors like smoking and obesity.

## **PTSD may be milder, better managed in older vets**

Surprisingly, the PTSD group fared better than patients with all other psychiatric disorders, which also included adjustment disorder, anxiety, and alcohol use and substance use disorders.

"PTSD is routinely screened in the VA Health Care System, so it may be more reliably detected even for less severe cases, compared with other psychiatric conditions," said Nishimi, who is also affiliated with the UCSF Weill Institute for Neurosciences. "Older veterans, who may have been diagnosed with PTSD many years ago and have chronic PTSD, may have symptoms that are relatively less severe or better managed," she said, noting that PTSD in patients under 65 with COVID yielded worse outcomes than in older patients (16% higher risk of hospitalization compared with 6% for the 65-plus cohort).

The researchers also found that patients with substance or alcohol use disorder were significantly more likely to be hospitalized for COVID: 62% and 45%, respectively. But [mortality rates](#) were about the same as those without a psychiatric diagnosis, indicating that lack of caregiver or [social support](#), and an increased incidence of homelessness could be driving these higher hospitalization rates.

## **Co-occurring conditions explain worse outcome, but not completely**

The number of deaths and hospitalizations were markedly higher when the researchers did not account for co-occurring medical conditions. For example, when patients with PTSD were compared to those without [psychiatric disorders](#), solely adjusting for age, sex, race and ethnicity, they had an 13% higher risk of death from COVID. This compares with an 8% higher risk when other medical conditions and smoking and obesity were taken into consideration.

Consistent with prior evidence, this suggests that unhealthy habits like physical inactivity, poor diet and smoking, as well as co-occurring [medical conditions](#), may contribute to worse outcomes of COVID for patients with PTSD and other [mental illnesses](#).

Other mechanisms that could account for higher risks for patients with mental illness include elevated inflammation and dysregulated immune functioning, said senior author Aoife O'Donovan, Ph.D., also of the UCSF Department of Psychiatry and Behavioral Sciences, and of the San Francisco VA Health Care System. "Psychological stress from the pandemic overall, or the experience of SARS-CoV-2 infection itself, may have exacerbated psychiatric symptoms, which could affect inflammatory response. Additionally, PTSD may accelerate cellular aging, shortening telomeres, thus increasing the risk of age-associated diseases," she said.

"While other psychiatric conditions have been linked to comorbidities, inflammation and health risk behaviors, PTSD in particular is characterized by lower levels of the stress hormone cortisol, which has anti-inflammatory properties that may be beneficial in reducing the inflammatory activity that underlies many adverse outcomes of COVID."

The study follows previous research that shows COVID patients with mental illness were more likely to suffer from breakthrough COVID.

Study co-authors include Daniel Bertenthal, MPH, of the San Francisco VA Health Care System; Thomas C. Neylan, MD; Emily A. Dolsen, Ph.D.; and Karen H. Seal, MD, of UCSF and the San Francisco VA Health Care System.

**More information:** Kristen Nishimi et al, Post-traumatic stress disorder and risk for hospitalization and death following COVID-19 infection, *Translational Psychiatry* (2022). [DOI: 10.1038/s41398-022-02156-w](https://doi.org/10.1038/s41398-022-02156-w)

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