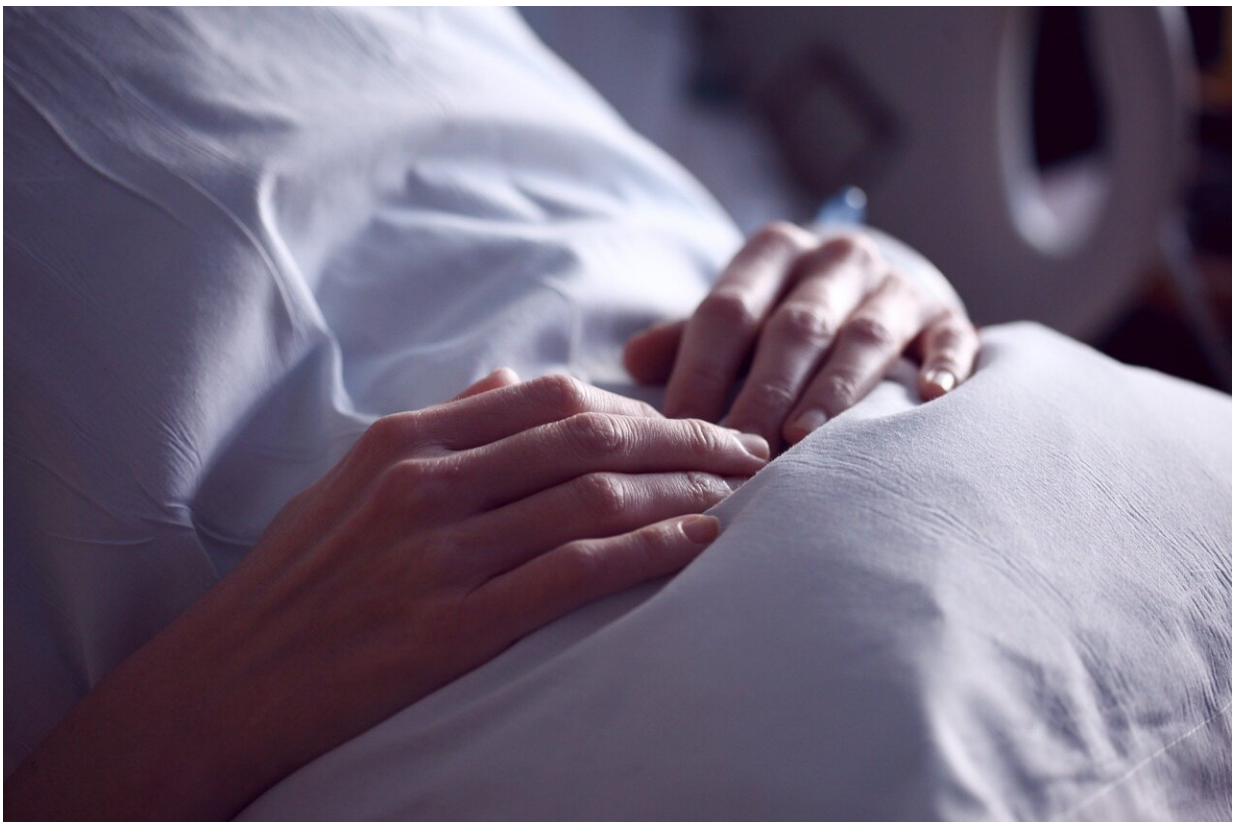


Risks of anxiety, suicide attempt may rise significantly after cardiovascular hospitalization

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In the first year after hospitalization for heart disease, stroke or other cardiovascular diseases, people were 83% more likely to be diagnosed

with anxiety, depression, suicide behaviors or other psychiatric conditions than people free of cardiovascular disease, according to an analysis [published](#) today in the *Journal of the American Heart Association*.

"It's crucial to pay attention to both physical and mental health after a stroke or heart disease diagnosis," said senior study author Huan Song, M.D., Ph.D., a professor of epidemiology at the West China Biomedical Big Data Center, West China Hospital, Sichuan University in Chengdu, China.

Previous research has noted an increased risk of [psychiatric disorders](#), such as anxiety, depression and post-traumatic stress disorders (PTSD), among cardiovascular disease patients. However, many of those studies did not include environmental and lifestyle factors or a large number of participants.

This analysis of a large database included environmental and lifestyle factors that assessed both short- and long-term risk. It also reviewed whether different genetic susceptibilities to psychiatric disorders affect the possible link between cardiovascular disease and psychiatric disorders.

Researchers reviewed the records of the UK Biobank, a biomedical database and research resource with genetic, physical and health data for about 500,000 adults. Cardiovascular disease was defined here as [ischemic heart disease](#), cerebrovascular disease or stroke, blood clots, heart failure, irregular heart rhythms, or other conditions.

Researchers analyzed how often patients who had been hospitalized for cardiovascular disease were later diagnosed with anxiety, depression, stress-related disorder, substance misuse, a psychotic disorder or suicide behaviors in comparison with people of similar age, gender and the

presence of other serious health conditions.

Participants were excluded from the analysis if they were diagnosed with cardiovascular disease or a psychiatric condition prior to the date of cardiovascular hospitalization.

The analysis found:

- People were 83% more likely to be diagnosed with a psychiatric disorder within one year of hospital admission for cardiovascular disease, compared to individuals free of cardiovascular disease, psychiatric disorders or suicide attempts.
- People hospitalized for cardiovascular disease were 24% more likely to be diagnosed with a psychiatric disorder up to nearly eight years later, compared to people without cardiovascular disease.
- The largest increases in risk were for anxiety, depression and suicide behaviors, such as self-harm or suicide attempts.
- People who had a stroke or other forms of [cerebrovascular disease](#) had more than three times higher risk of any psychiatric disorder and suicide attempt within one year of hospitalization and a 49% increased risk after one year.
- The association between cardiovascular disease and anxiety, depression, stress-related disorder, substance misuse, psychotic disorders or suicide behaviors was not significantly modified by different genetic susceptibilities.

"If you or a loved one has been hospitalized for heart disease, be aware that [mental health issues](#) may arise during recovery. It's important to monitor for signs of anxiety, depression or [suicidal thoughts](#). These mental health challenges are common and treatable," said Song.

"This study's findings confirm that after a cardiovascular disease

diagnosis and/or hospitalization, patients are at increased risk for mental health conditions; therefore, mental health screening and [early intervention](#) are crucial," said Mariell Jessup, M.D., FAHA, chief science and medical officer of the American Heart Association.

"It's also critical for patients, family members, loved ones or caregivers to share any changes that may signal depression, anxiety or potential for suicidal behaviors with the health care team. Mental health, biological health, physiological health and [physical health](#) are inextricably intertwined.

"And, as detailed in our 2023 guideline on chronic coronary disease and two other scientific statements, routine screening and referrals for mental health care and management should be considered for most patients with cardiovascular disease."

Song urged people having suicidal thoughts to contact emergency services or go to the nearest emergency room right away or use crisis resources, such as the National Suicide Prevention Lifeline (call 988 in the U.S.) or local mental health crisis services.

Song added, "Patients should tell their health care professional about any mental health symptoms. They can provide support, refer you to a mental health specialist or adjust your treatment plan. Reach out to a therapist, counselor or psychiatrist for help if you're struggling with your mental health or share your feelings with family members, friends or a support group to gain emotional support and help you navigate the challenges you're facing."

The study has several limitations. Because the diagnoses of cardiovascular disease were taken from hospital inpatient admission data, potentially leading to undercounting patients with less severe cardiovascular disease, the findings may not be generalizable to all

people with cardiovascular disease. In addition, diagnosed psychiatric disorders may have been present but were undetected before the cardiovascular event.

Some risk factors that may have influenced the results, such as medication use or the diagnosis of psychiatric disorders in family members, were not included in the analysis. Moreover, the data in the UK Biobank is from a population of mostly white adults in Britain, so results may not be generalizable to people of other racial or ethnic groups or living in other geographic locations.

Study details, background and design:

- The investigators analyzed the health records of selected participants in the UK Biobank, a large biomedical database and research resource with genetic, physical and [health data](#) on about 500,000 adults. Participants were enrolled between 2006 and 2010, lived in the U.K. and received health care through the National Health Service.
- The analysis compared almost 64,000 adults (64% men; average age 63 years) first hospitalized with [cardiovascular disease](#) or stroke between 1997 and 2020. Almost 128,000 adults were matched for gender, age and the presence of other serious illness.
- Researchers compared the diagnosis of any psychiatric disorder or suicide attempt after the date of CVD hospitalization. These included anxiety, depression, stress-related disorder, substance misuse, psychotic disorder and suicidal behaviors.
- Using a [Polygenic Risk Score](#), which estimates susceptibility to a disease based on genes, the researchers analyzed whether a genetic predisposition to these [psychiatric conditions](#) influenced the risk after a CVD hospitalization.
- Participants were excluded from the analysis if they were diagnosed with [heart disease](#) or a psychiatric condition before the

date of the CVD hospitalization.

More information: Jie Yang et al, Cardiovascular Disease, Genetic Susceptibility, and Risk of Psychiatric Disorders and Suicide Attempt: A Community-Based Matched Cohort Study Based on the UK Biobank, *Journal of the American Heart Association* (2024). [DOI: 10.1161/JAHA.123.031280](https://doi.org/10.1161/JAHA.123.031280)

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