

Study finds women with depression face higher cardiovascular risk than men

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People with depression face an increased risk of cardiovascular disease (CVD); however, more women experience CVD following a depression diagnosis than men, according to a new study published in *JACC: Asia*.

The study investigates the connection between depression and CVD, shedding light on potential mechanisms that contribute to its sex-based differences and underscoring the importance of tailoring CVD prevention and management strategies according to sex-specific factors.

Depression is the third leading cause of morbidity worldwide. Prior research shows that it is associated with a heightened risk of cardiovascular events, including myocardial infarction (MI), angina, stroke and CV mortality.

Women with depression are at greater relative risk of developing heart-related negative [health outcomes](#) than men, but there is still controversy over the evidence on sex differences in the impact of depression on heart health and the mechanisms underlying this are not well understood.

"The identification of sex-specific factors in the adverse effects of depression on cardiovascular outcomes may help in the development of targeted prevention and treatment strategies that address the specific CVD risks faced by depressed patients," said Hidehiro Kaneko, MD, assistant professor at the University of Tokyo in Japan and a corresponding author of the study.

"A better understanding will allow health care providers to optimize care for both men and women with depression, leading to improved CVD outcomes for these populations."

Researchers in this study evaluated the association between depression and subsequent CVD events by conducting an observational cohort study using the JMDC Claims Database between 2005 and 2022. They identified 4,125,720 participants who met the study's criteria. The median age was 44 (36–52) years, and 2,370,986 participants were men. Depression was defined as those clinically diagnosed before their initial health checkup.

Using standardized protocols, the study collected participant's body mass index (BMI), [blood pressure](#) and fasting laboratory values at their initial health checkup. The primary outcome was a composite endpoint including MI, angina pectoris, stroke, [heart failure](#) (HF) and atrial fibrillation (AF).

Researchers analyzed the statistical significance of differences in clinical characteristics between participants with and without depression. Results indicate that the hazard ratio of depression for CVD was 1.39 in men and 1.64 in women compared with participants without depression. Models also indicate that hazard ratios of depression for MI, [angina pectoris](#), stroke, HF, and AF were higher for women than for men.

Study authors highlight an important discussion regarding the potential mechanisms that may contribute to why depression impacts women's [heart health](#) more than men's. One explanation is that women may experience more severe and persistent symptoms of depression compared to men, and they may be more likely to have depression during critical periods of hormonal changes, such as pregnancy or menopause.

Other mechanisms include women's greater susceptibility to traditional risk factors when depressed, such as hypertension, diabetes and obesity, which may contribute to the development of CVD. Differences in health care utilization and treatment between men and women and sex-specific differences in biological factors, such as genetics and hormonal profiles, may also increase women's CVD risk.

"Our study found that the impact of sex differences on the association between depression and cardiovascular outcomes was consistent," Kaneko said. "Health care professionals must recognize the important role of depression in the development of CVD and emphasize the importance of a comprehensive, patient-centered approach to its

prevention and management. Assessing the risk of CVD in depressed patients and treating and preventing depression may lead to a decrease of CVD cases."

Limitations of the study include the inability to establish direct causality between depression and cardiovascular events and the inability to accurately reflect the severity or duration of depressive symptoms. Potential confounding factors that may influence the association between [depression](#) and CVD were not accounted for, such as socioeconomic status. Researchers also acknowledge that COVID-19 may have been a confounder.

More information: Sex Differences in the Association Between Depression and Incident Cardiovascular Disease, *JACC: Asia* (2024).

Provided by American College of Cardiology

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