CDC study on depression and mortality finds wealth, smoking, and exercise reduce risk of death

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US Centers for Disease Control and Prevention (CDC) researchers in Atlanta have examined the association between depressive symptoms

and mortality in a large, diverse, nationally representative sample of US adults.

In a paper, "Depressive Symptoms and Mortality Among US Adults," published in *JAMA Network Open*, the CDC team found a higher risk of all-cause, cardiovascular disease, and ischemic heart disease mortality among adults with moderate to severe depressive symptoms compared to those without depressive symptoms.

The study utilized data from the National Health and Nutrition Examination Survey (NHANES) from 2005 to 2018, which included 23,694 participants aged 20 and older (mean age 44.7). Depressive symptoms were assessed using the Patient Health Questionnaire-9 (PHQ-9), a validated screening instrument for measuring depressive symptoms.

The cohort's characteristics included education, marital status, poverty-to-income ratio, health insurance, family history of cardiovascular disease, chronic kidney disease, antidepressant use and alcohol consumption. The NHANES dataset was cross-referenced with the National Death Index through 2019 to track mortality outcomes.

Mild depressive symptoms were found in 14.9% of participants, while moderate to severe depressive symptoms were seen in 7.2%.

For all-cause mortality, the adjusted base model found mild depressive symptoms were associated with a hazard ratio of 1.42 compared to those with no depressive symptoms, while moderate to severe depressive symptoms had a hazard ratio of 1.78.

For cardiovascular disease mortality, the overall hazard ratios were 1.49 for mild depressive symptoms and 1.79 for moderate to severe depressive symptoms. For ischemic heart disease mortality, mild

depressive symptoms showed no impact, while moderate to severe depressive symptoms had a hazard ratio of 2.21. Both were strongly correlated with poverty levels.

Lifestyle factors like smoking, physical activity, and sleep health were identified as important mediators of the association between depressive symptoms and mortality. The associations were largely consistent across different subgroups.

Not highlighted in the CDC study and unlikely to be recommended, smoking caused the most significant reduction in mortality from all causes (HR 1.65) in both the mild and moderate to severe depression groups compared to the base model (HR 1.78). This was followed closely by physical activity (HR 1.67), which is much more likely to be encouraged.

The study suggests that addressing depressive symptoms and associated risk factors could be important for reducing the burden of depression and its impact on mortality. It is unclear and unstated in the report how to address specific risk factors, such as the most significant driver of depression-related mortality in the data—income inequality.

More information: Zefeng Zhang et al, Depressive Symptoms and Mortality Among US Adults, *JAMA Network Open* (2023). DOI: 10.1001/jamanetworkopen.2023.37011

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