

Social vulnerabilities linked to cardiometabolic risk during pregnancy

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Social vulnerabilities, such as living in poverty, living in a single parent household, not having a car or being described as a minority, were linked to increased cardiometabolic risk during pregnancy, according to

preliminary research to be presented at the American Heart Association's Scientific Sessions 2022. The meeting, held in person in Chicago and virtually, Nov. 5-7, 2022, is a premier global exchange of the latest scientific advancements, research and evidence-based clinical practice updates in cardiovascular science.

The number of pregnancy-related deaths in the U.S. has increased in recent years, and about one-third of these deaths are due to [cardiovascular disease](#), according to the Centers for Disease Control and Prevention.

In this study, researchers explored the link between cardiometabolic factors and social vulnerabilities.

"We examined cardiometabolic risk factors as opposed to [cardiovascular risk factors](#) because we are looking at the broader implications of all things that contribute to cardiac outcomes, which includes social risk factors," explained lead study investigator Kristen A. Harris, M.D., an [internal medicine](#) resident at University Hospitals Cleveland Medical Center in Cleveland, Ohio. "Obesity, hypertension and Type 2 diabetes, which can be affected by nuanced realities like not having access to transportation, socioeconomic status potentially implicating how one eats, and other [social determinants](#), may feed into poor metabolic disease, which can increase the risk of cardiac disease—all of which are more encompassed under the broad definition of cardiometabolic disease.

"Identifying and recognizing social hurdles that may be hindering [health care](#) among women, particularly pregnant women, is important to increase public health intervention efforts," Harris said. "Recognizing these barriers that relate to increased risk for pregnancy-related cardiovascular disease can prompt early intervention—during pre-pregnancy planning or at the initial prenatal visits."

Researchers compared four leading [cardiometabolic risk factors](#) with a combined measure of social [vulnerability](#), called the social vulnerability index, which is derived from the U.S. Census Bureau. They analyzed health data for nearly 19 million pregnancies in 577 U.S. counties from 2016-2020 and evaluated the potential link for four subgroups of social vulnerability.

Cardiometabolic risk factors identified for this study's analysis included pre-pregnancy Type 2 diabetes, pre-pregnancy high blood pressure, tobacco use and obesity—defined by body mass index measurements.

The federally identified social vulnerabilities include:

- economic and education status, which encompassed income below the federally defined poverty level, unemployment, unstable income or no [high school diploma](#);
- household composition and disability, characterized by household members who were disabled, elderly or children, or were single-parent households;
- minority status based on self-reports captured by the [social vulnerability index](#), and poor mastery of English; and
- housing type and transportation, which included multi-unit structures, [mobile homes](#), crowding, group homes and/or no vehicle.

All four [cardiometabolic risk](#) factors were associated with some social vulnerability, and some had stronger associations than others. For example, obesity had a 95% likelihood of being associated with socioeconomic vulnerability and was twice as likely to be linked with overall social vulnerability. However, while tobacco use was directly associated with [socioeconomic status](#)/housing composition and disability, with 95% likelihood, it was not associated with overall social vulnerability.

"These associations suggest that those who were identified as socially vulnerable were more likely to have these cardiometabolic conditions in general and during pregnancy," Harris said.

"Social vulnerability is playing a role in an increased prevalence of cardiometabolic and cardiovascular disease in pregnant women and in the general population," she said. "This issue needs to be examined further so we may begin to understand and address these social determinants of health. Next steps include looking into more specific social risk factors, potentially looking into cause and effect, as well as the associations between social vulnerability and post-pregnancy complications. Partnering with cardiologists to ensure a safe pregnancy and a healthy post-pregnancy period may be a way to establish earlier cardiovascular disease prevention and care and allow us to identify more easily who is at increased risk."

The findings are not surprising to Garima Sharma, M.D., FAHA, co-author of a 2021 [AHA policy statement on maternal health](#) and director of cardio obstetrics and associate vice chair of women's careers in academic medicine at Johns Hopkins University School of Medicine in Baltimore.

"We know that about 60% of the individuals entering pregnancy in the United States have sub-optimal cardiovascular health, and we have seen an increase in cardiometabolic disease in the birthing population in the country," Sharma said. "Because this study looked at how people live in the neighborhoods that they live: how they eat, how much access they have to medical care, their household composition and their overall ability to pay their bills, it allows us to think beyond just prescribing medications and asking patients to be healthier and go for a walk in their neighborhood that may not be a safe environment. We need to think about how we can create better, safer communities and improve access to preventive care."

Among the study limitations are that it found only a relationship between social vulnerability and cardiometabolic risks in pregnancy—it did not prove cause and effect. The study did not include specific social determinants of health that may also play a role, such as food insecurity and access to health care. Finally, the study reviewed only pre-pregnancy cardiovascular risks and did not include post-pregnancy complications.

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More information: Abstract: [www.abstractsonline.com/pp8/?& ...
1/presentation/15615](http://www.abstractsonline.com/pp8/?&...1/presentation/15615)

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