

Poor maternal heart health results in preterm birth, low birthweight, cesarean birth

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Baby on mother's belly right after birth. Credit: Tom Adriaenssen/Wikipedia.

With researchers from the University of Massachusetts Boston, James Muchira, a postdoctoral fellow in the Vanderbilt School of Nursing, has confirmed the correlation between poor maternal cardiovascular health and adverse childbirth outcomes.

For every heart health risk factor a mother has, likelihood of an adverse childbirth outcome—defined as [preterm birth](#), low birthweight and cesarean birth—increases. Clustering of [risk factors](#) is more likely found among women who are not college educated, who have an annual income of less than \$40,000 and who identify as non-Hispanic Black, Hispanic and American Indian/Alaska Natives. Maternal high blood pressure is the strongest predictor of an adverse childbirth outcome.

The research acknowledges that "the complex history and persistent racial discrimination in the U.S. health care system have led to disparities in

health outcomes along racial lines. Consequently, preventable pregnancy-related complications account for more deaths in non-Hispanic Black, American Indian/Alaska Native and Puerto Rican women—who also have higher rates of infant mortality and preterm births than non-Hispanic White women. Similarly, racial disparities exist in attaining ideal cardiovascular health, defined by achieving the recommended levels of seven American Heart Association metrics on blood pressure, cholesterol, blood glucose, physical activity, BMI, healthy diet and not smoking."

Typical research on maternal health's impact on childbirth outcomes looks at a single risk factor or works with a small sample size. By taking a nationally representative sample of U.S. births with four cardiovascular health metrics—diabetes, hypertension, cigarette smoking and body mass index—Muchira has identified the effects of clustering maternal cardiovascular health risk factors and how race/ethnicity plays into childbirth outcomes.

"We intend to further research how early risk factors for cardiovascular disease begin in infants and to quantitatively define the connections between maternal [health](#) and child heart [health outcomes](#)," Muchira said. He is beginning to conduct an epigenetic study to find markers for [cardiovascular disease](#) in mothers that are present in children.

The article, "Maternal Cardiovascular Health and Adverse Childbirth Outcomes in the United States," was published in the *Journal of Cardiovascular Nursing* on April 9.

More information: James M. Muchira et al. Maternal Cardiovascular Health and Adverse Childbirth Outcomes in the United States, *Journal*

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