

Study in Haiti suggests early-onset heart failure is prevalent form of heart disease in low-income countries

April 29 2024



Staff at GHESKIO clinic in Port-au-Prince, Haiti, process laboratory samples.
Credit: Bahare Khodabande

Early-onset heart failure is alarmingly common in urban Haiti—over

15-fold higher than previously estimated—according to a study conducted by Weill Cornell Medicine researchers in partnership with the Haitian medical organization GHESKIO. Heart failure occurs when the heart muscle can no longer pump an adequate amount of blood throughout the body.

The study indicates that the nature of cardiovascular disease in Haiti, and perhaps other low- and middle-income nations, differs from wealthier countries where [ischemic heart disease](#), also called [coronary heart disease](#), is prevalent. This condition, where the heart doesn't receive enough blood flow and oxygen due to narrowing of heart arteries, was assumed to be the global norm.

The [findings](#), published in *The Lancet Regional Health—Americas*, are from one of the world's first population-based cardiovascular clinical studies in a low-income setting designed to understand the landscape of heart disease. The cohort included 3,003 residents in Haiti's capital, Port-au-Prince, who were clinically assessed for heart conditions.

Dr. Margaret McNairy and Dr. Lily Yan, members of Weill Cornell Medicine's Center for Global Health and the Division of General Internal Medicine, worked with Dr. Jean Pape, executive director of GHESKIO, to lead the research. Dr. Pape is also the Howard and Carol Holtzmann Professor in Clinical Medicine at Weill Cornell Medicine. They determined that heart failure affected nearly 12% of participants, with a median age of 57, much younger than in the United States.

"What we found differed strikingly from assumptions based on studies in wealthy countries," said Dr. McNairy, the principal investigator and an associate professor of medicine who has worked with GHESKIO over the past decade. "It's a paradigm shift for our understanding of cardiovascular disease in under-resourced countries and important to guide health planning for future prevention and treatment."

Cardiovascular diseases cause more death and disability worldwide than any other type of condition. However, without data collected on the ground it was unclear whether they affect people in the same way globally.

"In a place like Haiti, people live in an environment where they encounter extreme poverty, more pollution and experience high levels of stress, including from civil unrest," said corresponding author Dr. Yan, an assistant professor of medicine at Weill Cornell Medicine.

"Consequently, we thought there would be differences in heart disease and the factors driving it." This study tested that suspicion.

Distinctive risks for an all-too-common problem

GHEKIO community outreach workers recruited residents from a random sample of households in urban Port-au-Prince and invited them to participate by visiting the GHEKIO clinic. Once there, participants answered questions about their health and received a comprehensive physical exam including blood pressure measurements and blood work. They also had non-invasive tests including an electrocardiogram (ECG) that measured the electrical activity of the heart, and an echocardiogram, which looked at the function of their hearts.

Delving into the data, the researchers used international guidelines to determine cardiovascular conditions, including heart failure, stroke, heart attack and chest pain. Nearly 15% of Haitian adults had one or more of these conditions, indicating that cardiovascular diseases are a widespread issue. Heart failure, specifically stiffening of the muscle, affected the majority of these patients.

Their analysis found that elevated blood pressure, known as hypertension, was the most common risk factor for heart failure among Haitians. However, a previous study [showed](#) that only 13% of Haitian

adults with hypertension had their blood pressure under control.

When establishing infrastructure to address cardiovascular diseases in Haiti, "this study suggests that we need to shift focus to early prevention of hypertension and [heart failure](#)," Dr. McNairy said. The team is also studying the underlying factors contributing to this health crisis including the adversity Haitians routinely face such as hunger, poverty, sanitation, stress and other factors.

More information: Lily D. Yan et al, Spectrum of prevalent cardiovascular diseases in urban Port-au-Prince, Haiti: a population-based cross-sectional study, *The Lancet Regional Health—Americas* (2024). [DOI: 10.1016/j.lana.2024.100729](https://doi.org/10.1016/j.lana.2024.100729)

Provided by Weill Cornell Medical College

Citation: Study in Haiti suggests early-onset heart failure is prevalent form of heart disease in low-income countries (2024, April 29) retrieved 17 May 2024 from <https://medicalxpress.com/news/2024-04-haiti-early-onset-heart-failure.html>

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