

Study links low wages with hypertension, especially for women and younger workers

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Workers earning the lowest wages have a higher risk of hypertension than workers with the highest wages, according to new research from UC Davis.

The correlation between wages and [hypertension](#) was especially strong among women and persons between the ages of 25 to 44.

"We were surprised that low wages were such a strong risk factor for two populations not typically associated with hypertension, which is more often linked with being older and male," said J. Paul Leigh, senior author of the study and professor of public health sciences at UC Davis. "Our outcome shows that women and younger employees working at the lowest pay scales should be screened regularly for hypertension as well."

The study, published in the December issue of the [European Journal of Public Health](#), is believed to be the first to isolate the role of wages in hypertension, which occurs when the force of circulating blood against [artery walls](#) is too high. According to the [Centers for Disease Control and Prevention](#), hypertension affects approximately 1 in 3 adults in the U.S. and costs more than \$90 billion each year in health-care services, medications and missed work days. It also is a major contributor to heart disease and stroke, both of which are leading causes of death and disability.

While there is a known association between lower [socioeconomic status](#) (SES) and hypertension, determining the specific reason for that

association has been difficult, according to Leigh. Other researchers have focused on factors such as occupation, job strain, education and [insurance coverage](#), with unclear results. Leigh's study was the first to focus on wages and hypertension.

"By isolating a direct and fundamental aspect of work that people greatly value, we were able to shed light on the relationship between SES and circulatory health," said Leigh. "Wages are also a part of the employment environment that easily can be changed. Policymakers can raise the minimum wage, which tends to increase wages overall and could have significant public-health benefits."

In conducting the study, the team used data from the Panel Study of Income Dynamics, a highly regarded database in social science. This longitudinal, representative study of families in the United States includes information on wages, employment and health, including hypertension status. The team used information from a total of 5,651 household heads and their spouses for three time periods: 1999-2001, 2001-03 and 2003-05. The sample was limited to working adults between 25 and 65 years of age. Anyone with hypertension during the first year (e.g., 1999) of each time period was eliminated from the final sample.

Wages were calculated as annual income from all sources divided by work hours and ranged from about \$2.38 to \$77 per hour in 1999 dollars. Hypertension was determined by respondents' self-reports of a hypertension diagnosis from their physicians.

The team used logistic regressions for the statistical analysis, and found that doubling the wage was associated with a 16 percent decrease in the risk of a hypertension diagnosis. Doubling the wage reduced the risk of a hypertension diagnosis by 1.2 percent over two years and 0.6 percent for one year.

"That means that if there were 110 million persons employed in the U.S. between the ages of 25 and 65 per year during the entire timeframe of the study—from 1999 until 2005—then a 10 percent increase in everyone's wages would have resulted in 132,000 fewer cases of hypertension each year," said Leigh.

Additional logistic regression analyses by demographics such as age, gender, race and co-morbidities such as obesity, diabetes and alcohol consumption revealed two standout outcomes. Being in the youngest age group—between 25 and 44 years old—or being female were strong predictors of hypertension. In fact, doubling the wages of younger workers was associated with a 25 to 30 percent decrease in the risk of a hypertension diagnosis, and doubling the wages of women was associated with a 30 to 35 percent decrease in the risk of a hypertension diagnosis.

Leigh said that a potential limitation of the study regarding the gender disparity was its reliance on respondents' self-reports of hypertension diagnoses.

"Other research has shown that women are more likely than men to report a health diagnosis," said Leigh. "However, the longitudinal nature of the data used in our study helps mitigate that natural bias, and self-reports of health do typically correlate with clinical data."

Leigh recommends additional research using different national data sets to investigate the potential relationship between low [wages](#) and hypertension.

"If the outcomes are the same, we could have identified a way to help reduce the costs and personal impact of a major health crisis," said Leigh.

More information: "Are Low Wages Risk Factors for Hypertension"
eurpub.oxfordjournals.org/content/22/6/854.abstract.

Provided by UC Davis

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