Research Brief

Differences in Blood Pressure Levels Among Children by Sociodemographic Status

UMass Worcester Prevention Research Center

Overview

Overweight and obesity are risk factors for high blood pressure among children. In 2017, the American Academy of Pediatrics (AAP) updated clinical practice guidelines to include weight as a risk factor when screening children for high blood pressure. And so, new prevalence (percentage) estimates were needed. Research suggested that there are disparities in the prevalence of high blood pressure that are related to demographic factors such as age, race and ethnicity. However, these studies used outdated blood pressure guidelines, did not investigate the relationship with education, income, and other socioeconomic factors, or the role of body weight in observed disparities.

Main Questions

The researchers wanted to know:

1. What is the prevalence of different high blood pressure levels among US children from 2011 to 2018?
2. Does the blood pressure prevalence vary across sociodemographic subgroups?
3. What role does weight play in sociodemographic disparities in blood pressure?

Study

This cross-sectional study used nationally representative data of 5,971 children between the ages of 8-17 years of age from the 2011 to 2018 versions of the National Health and Nutrition Examination Survey (NHANES) weighted to represent 36,612,323 children. Blood pressure categories were normal, elevated, or hypertensive, according to the 2017 AAP clinical practice guidelines. Prevalence estimates of different high blood pressure were computed. Log binomial regression was used to estimate crude and weight status adjusted prevalence differences for each sociodemographic subgroup. Sociodemographic factors included, age, sex, race/ethnicity, family education level, and family income.

The Bottom Line

Overweight and obesity are major risk factors for high and hypertensive blood pressure. Blood pressure is higher among certain sociodemographic subgroups of people. After adjustment for body weight, observed disparities in prevalence of high blood pressure in older, male, and non-Latino Black children remained. This indicates that factors beyond differences in body mass may contribute to disparities in high blood pressure.

Source

Goulding M, Goldberg R, Lemon SC. Differences in Blood Pressure Levels Among Children by Sociodemographic Status. Prev Chronic Dis 2021;18:210058. DOI: https://doi.org/10.5888/pcd18.210058.

Contact

Stephenie C. Lemon, PhD | Division of Preventive and Behavioral Medicine | University of Massachusetts Medical School.
E-mail: Stephenie.Lemon@umassmed.edu

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Spotlight on Results

1. In US children aged 8-17 years, prevalence of 7.2% for elevated blood pressure and 3.8% for hypertensive blood pressure was found from 2011-2018.
2. Higher prevalence of high blood pressure in males, older children (16-17 years) , non-Latino Black children, and children of lower socioeconomic status. After adjustment for weight, there were high blood pressure prevalence differences in age, sex, race/ethnicity, and parent/guardian education.
3. High blood pressure was more prevalent in children categorized as overweight or as having obesity than children of healthy weight.

Call for Action

Further investigation of sociodemographic disparities in blood pressure levels is needed to guide public health efforts.

A better understanding of how blood pressure in children varies by different sociodemographic factors is needed to know what action to take.