

Characteristics of U.S. Adults With Hypertension Who Are Unaware of Their Hypertension, 2011–2014

Ryne Paulose-Ram, Ph.D., Qiuping Gu, M.D., Ph.D., and Brian Kit, M.D., M.P.H.

Key findings

Data from the National Health and Nutrition Examination Survey

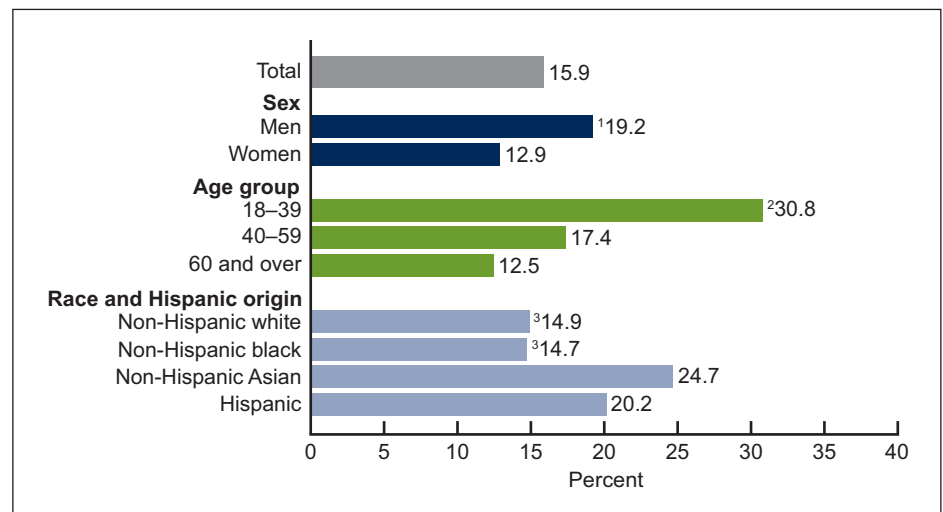
- In 2011–2014, 15.9% of adults with hypertension were unaware of their hypertension. This was a 46% decline since 1999–2002 (29.5%).
- A higher percentage of men (19.2%) than women (12.9%) and younger (aged 18–39, 30.8%) than older (aged 60 and over, 12.5%) adults with hypertension were unaware of their condition.
- A higher percentage of non-Hispanic Asian (24.7%) and Hispanic (20.2%) adults than non-Hispanic white (14.9%) and non-Hispanic black (14.7%) adults with hypertension were unaware of their condition.
- Almost 30% of adults with hypertension who had no health insurance were unaware of their hypertension compared with 14.4% of those with insurance.
- As health care visits increased, the percentage of adults with hypertension who were unaware of their status decreased.

High blood pressure is a risk factor for multiple diseases, including heart disease, stroke, and kidney disease (1). In 2011–2014, about 29% of U.S. adults had hypertension (2). Adults with hypertension who are undiagnosed and unaware of their hypertension will not be treated, and their blood pressure may remain above normal levels with damaging effects. Therefore, diagnosis and awareness of hypertension are essential for blood pressure management and control. This report presents recent national estimates of adults with hypertension who are unaware of their hypertension, that is, they reported not being told by a doctor or health care provider that they had high blood pressure.

Keywords: high blood pressure • NHANES

Nearly 16% of adults with hypertension were unaware of their hypertension.

Figure 1. Percentage of adults with hypertension who reported not being told by a doctor or health care provider that they had high blood pressure, by demographic characteristics: United States, 2011–2014



¹Significantly different from women.

²Significant linear trend.

³Significantly different from non-Hispanic Asian and Hispanic adults.

NOTE: Access data table for Figure 1 at: https://www.cdc.gov/nchs/data/databriefs/db278_table.pdf#1.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2011–2014.

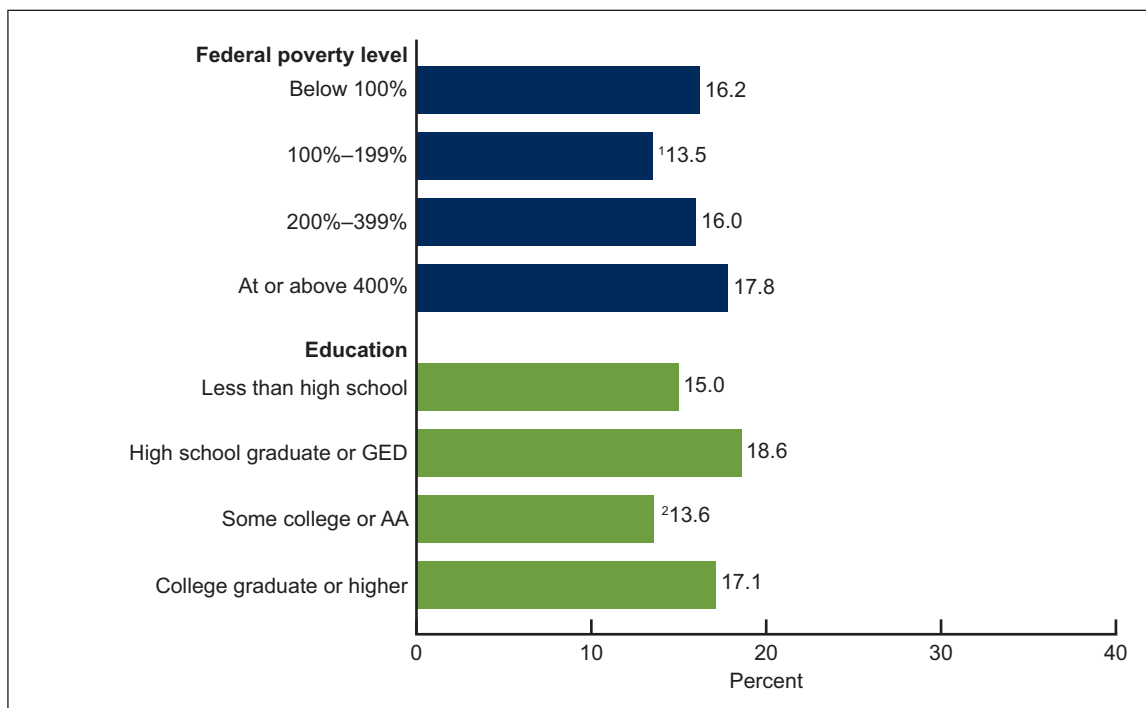


- During 2011–2014, 15.9% of adults aged 18 and over with hypertension were unaware of their hypertension (Figure 1).
- A higher percentage of men (19.2%) than women (12.9%) with hypertension were unaware of their hypertension status.
- The percentage of adults with hypertension who were unaware of their status decreased with increasing age (30.8% for adults aged 18–39, 17.4% for adults aged 40–59, and 12.5% for adults aged 60 and over).
- A higher percentage of non-Hispanic Asian (24.7%) and Hispanic (20.2%) adults with hypertension were unaware of their hypertension compared with non-Hispanic white (14.9%) and non-Hispanic black (14.7%) adults with hypertension.

Generally, there were no differences by income or education level in the percentages of adults with hypertension who were unaware of their hypertension.

- The percentage of adults with hypertension who were unaware of their hypertension did not vary consistently by income. The only significant difference was observed between those with incomes at 100%–199% of the federal poverty level (13.5%) and those at or above 400% of the federal poverty level (17.8%) (Figure 2).

Figure 2. Percentage of adults with hypertension who reported not being told by a doctor or health care provider that they had high blood pressure, by socioeconomic characteristics: United States, 2011–2014



¹Significantly different from percentage at or above 400% of the federal poverty level.

²Significantly different from college graduate or higher group.

NOTES: GED is General Educational Development high school equivalency diploma. AA is associate's degree. Access data table for Figure 2 at: https://www.cdc.gov/nchs/data/databriefs/db278_table.pdf#2.

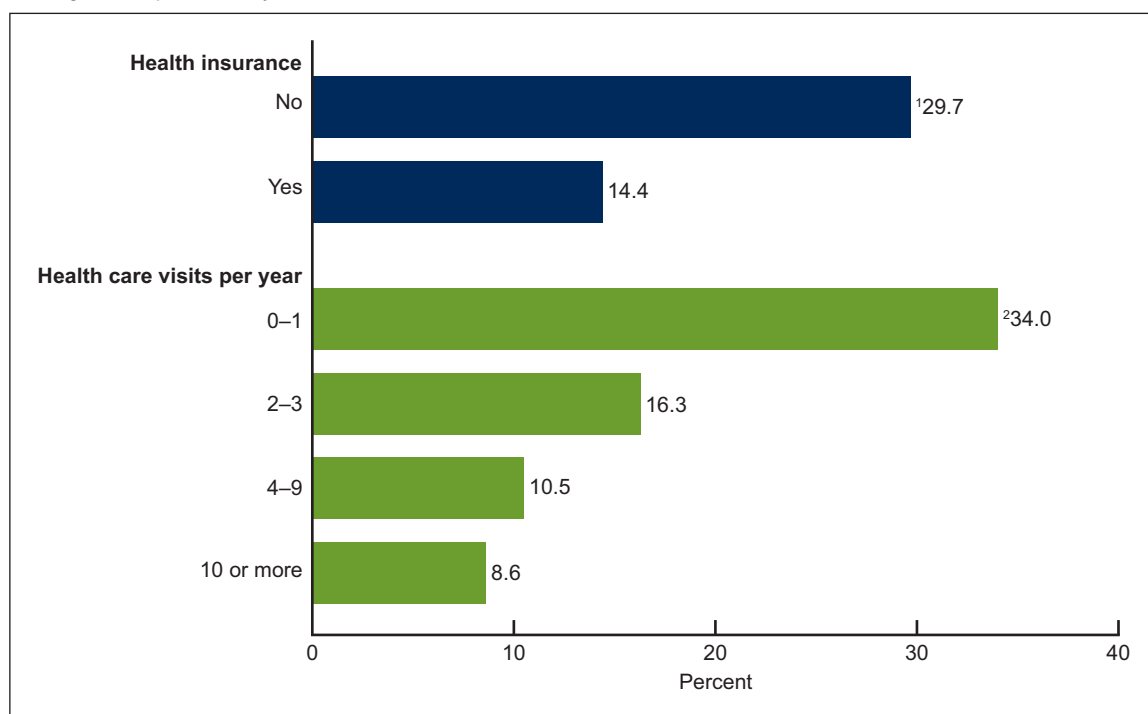
SOURCE: NCHS, National Health and Nutrition Examination Survey, 2011–2014.

- The percentage of adults with hypertension who were unaware of their hypertension did not vary consistently by education. The only significant difference was observed between those with some college education (13.6%) and those with a college education or higher (17.1%).

Adults with hypertension who had no health insurance or few health care visits were more likely to be unaware of their hypertension.

- About 30% of adults with hypertension who had no health insurance were unaware of their hypertension. This is more than double the percentage among those with health insurance (14.4%) (Figure 3).
- The percentage of adults with hypertension who were unaware of their hypertension decreased with increasing health care visits. Specifically, 34.0% of adults with hypertension who had one or no health care visits in the past year were unaware of their hypertension. In contrast, 8.6% of adults with hypertension who had 10 or more visits in the past year were unaware of their condition.

Figure 3. Percentage of adults with hypertension who reported not being told by a doctor or health care provider that they had high blood pressure, by health insurance status and health care utilization: United States, 2011–2014



¹Significantly different from group who had health insurance.

²Significant linear trend.

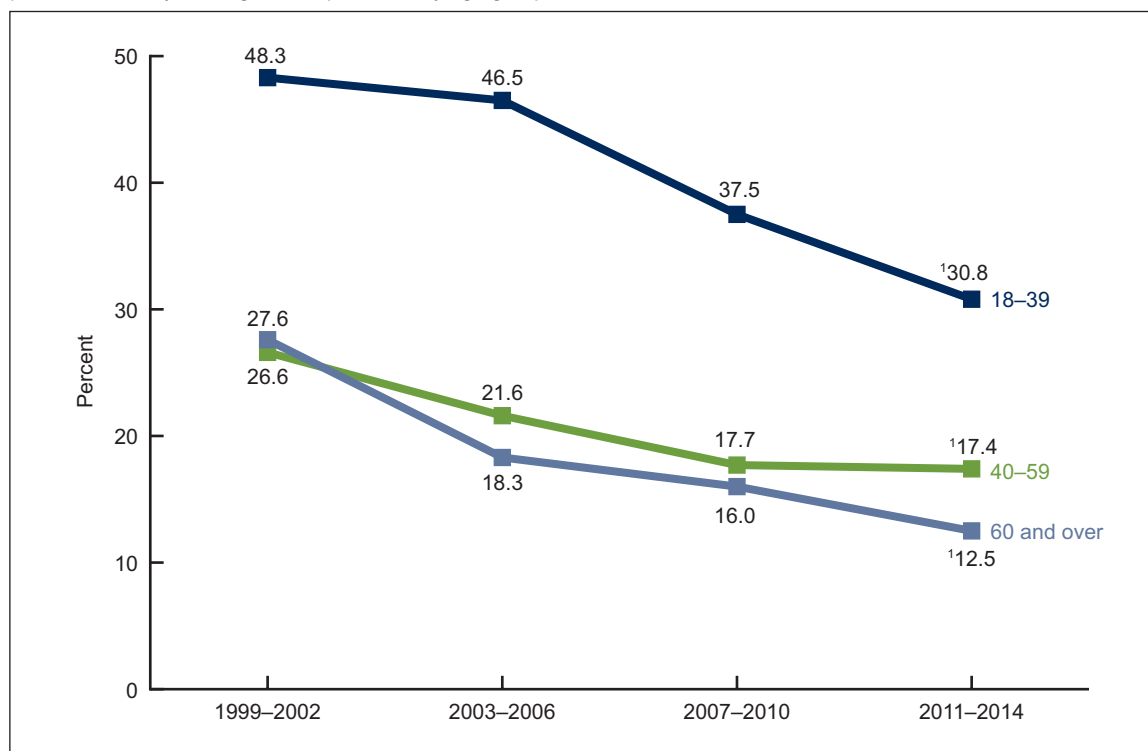
NOTE: Access data table for Figure 3 at: https://www.cdc.gov/nchs/data/databriefs/db278_table.pdf#3.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2011–2014.

Since 1999, the percentage of adults with hypertension who were unaware of their hypertension significantly declined for all age groups.

- The percentage of adults with hypertension who were unaware of their hypertension was 29.2% in 1999–2002 and significantly declined to 15.9% in 2011–2014 (data not shown in figure).
- Declines from 1999–2002 to 2011–2014 were seen among all age groups in the percentage of adults with hypertension who were unaware of their status: more than 35% among adults aged 18–39 (from 48.3% to 30.8%), approximately 35% for adults aged 40–59 (26.6% to 17.4%), and more than 50% for adults aged 60 and over (27.6% to 12.5%) (Figure 4).

Figure 4. Trends in the percentage of adults with hypertension who reported not being told by a doctor or health care provider that they had high blood pressure, by age group: United States, 1999–2014



¹Significant linear trend.

NOTE: Access data table for Figure 4 at: https://www.cdc.gov/nchs/data/databriefs/db278_table.pdf#4.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 1999–2014.

Summary

This report examines the characteristics of adults with hypertension who were unaware of their hypertension and complements the findings of an earlier publication using 2007–2012 data (3). Nearly 16% of adults (15.9%) were unaware of their hypertension, and significant differences were seen by demographic and health characteristics. Specifically, nearly 20% of men, about one-third of adults aged 18–39, and almost one in four non-Hispanic Asian adults with hypertension were unaware of their hypertension.

Having health insurance and increased utilization of health care were associated with a lower percentage of adults who were unaware of their hypertension. These results may be expected, because increased contact with a health care provider increases the chances that hypertension will be identified and diagnosed. Few significant differences were observed by income or education level.

Since 1999–2002, there has been a 46% decline in the percentage of adults with hypertension who were unaware of their hypertension. This decline was seen across all age groups. As a result, by 2011–2014, the percentage of those who were unaware had fallen to 15.9%. However, as noted above, certain subgroups with hypertension still have higher rates of being unaware.

Controlling high blood pressure is important to prevent various health complications, including heart disease, stroke, and kidney disease. Diagnosis and awareness of hypertension are essential to blood pressure management and control.

Definitions

Hypertension: Mean systolic blood pressure of 140 mm Hg or above, mean diastolic blood pressure of 90 mm Hg or above, or participant reported currently using medication to lower blood pressure.

Income: Based on the poverty income ratio, which is the ratio of household income to the poverty guidelines after accounting for inflation and family size (4).

Unaware of their hypertension: Among adults with hypertension, a negative response to the question, “Have you ever been told by a doctor or health professional that you had hypertension, also called high blood pressure?”

Data source and methods

Data from the National Health and Nutrition Examination Survey (NHANES) 1999–2014 were used for these analyses. NHANES is a cross-sectional survey designed to monitor the health and nutritional status of the resident, civilian noninstitutionalized U.S. population. The survey consists of interviews conducted in participants’ homes and standardized physical assessments conducted in mobile examination centers (MECs), where blood and urine specimens are collected.

The NHANES sample is selected through a complex, multistage probability design. During 2011–2014, non-Hispanic black, non-Hispanic Asian, and Hispanic persons were oversampled to obtain more reliable estimates of health on these population subgroups. Race and Hispanic

origin-specific estimates reflect persons reporting only one race; those reporting more than one race are included in the analyses but are not reported separately.

Up to three brachial systolic and diastolic blood pressure (BP) readings were taken during a single MEC visit by a trained physician following a standard protocol. Appropriate BP cuff sizes were used for participants based on measurement of mid-upper arm circumference. Most participants (95.1%) had two or three complete BP measurements. For participants with only one BP reading (0.5%), that single measurement was used as the mean value.

Examination sample weights were used to account for differential probabilities of selection, nonresponse, and noncoverage and were incorporated into the estimation process. All percentages presented in this report are crude estimates. Standard errors of the percentages were estimated using Taylor series linearization. Differences between groups were tested using Student's *t* statistic at the $p < 0.05$ significance level. To test for linear trends, the null hypothesis of a nonlinear trend was examined using orthogonal polynomials. Statistical analyses were conducted using the SAS System for Windows version 9.3 (SAS Institute, Inc., Cary, N.C.) and SUDAAN version 10.0 (RTI International, Research Triangle Park, N.C.).

About the authors

Ryne Paulose-Ram, Qiuping Gu, and Brian Kit are with the National Center for Health Statistics, Division of Health and Nutrition Examination Surveys.

References

1. National Heart, Lung, and Blood Institute. The seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. 2004.
2. Yoon SS, Fryar CD, Carroll MD. Hypertension prevalence and control among adults: United States, 2011–2014. NCHS data brief, no 220. Hyattsville, MD: National Center for Health Statistics. 2015.
3. Wozniak G, Khan T, Gillespie C, Sifuentes L, Hasan O, Ritchey M, et al. Hypertension control cascade: A framework to improve hypertension awareness, treatment, and control. *J Clin Hypertens (Greenwich)* 18(3):232–9. 2016.
4. Johnson CL, Paulose-Ram R, Ogden CL, et al. National Health and Nutrition Examination Survey: Analytic guidelines, 1999–2010. National Center for Health Statistics. *Vital Health Stat* 2(161). 2013.

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