

Introduction

Hypertension is a major cardiovascular risk factor and contributes greatly to the burden of coronary heart disease and cerebrovascular disease.

Adolescents with elevated blood pressure are more likely to develop adult hypertension.

Objectives

Describe the prevalence of elevated blood pressure and hypertension among high school students.

Methods

From October 2012 to November 2018, we performed community cardiac screens among high school students.

These individuals underwent assessment with a health questionnaire, physical examination (including height, weight and blood pressure (BP)) as well as 12-lead electrocardiogram.

Blood pressure was measured in both arms using a mercury sphygmomanometer.

We used the 2017 American Heart Association guidelines to define elevated blood pressure and hypertension.

Results

In the six-year period, 6973 individuals underwent cardiovascular screening.

Of these, 61% were male and the median age was 17 (IQR 15-19).

The majority of students were Caucasian (83%), with Asian/Pacific Islands (5%), African American (4.9%) and Hispanic (3.1%) representing the remaining ethnicities.

146 individuals (2.1%) had an elevated BP recorded in both arms (Systolic BP >120 and Diastolic BP ≤80).

A further 39 individuals (0.6%) had Stage 1 hypertension recorded in both arms (Systolic BP between 130-139 or Diastolic BP between 81-89).

The mean BMI (SD) of all individuals screened was 21 (4). In those with elevated blood pressure or Stage 1 hypertension the mean BMI (SD) was 25 (5) and 26 (8). Ethnic minorities represented 28% of those with Stage 1 hypertension.

Conclusions

We report the prevalence of elevated blood pressure and hypertension in largely Caucasian adolescents.

The prevalence of elevated BP and hypertension among high school students is not insignificant.

Ethnic minorities and individuals with obesity represent a disproportionate number of individuals with elevated BP and hypertension.

Blood pressure measurement and weight reduction in adolescents may be cost-effective tools to reduce the burden of adult cardiovascular and cerebrovascular disease in the future.

Figure 1: Prevalence of hypertension in screening population

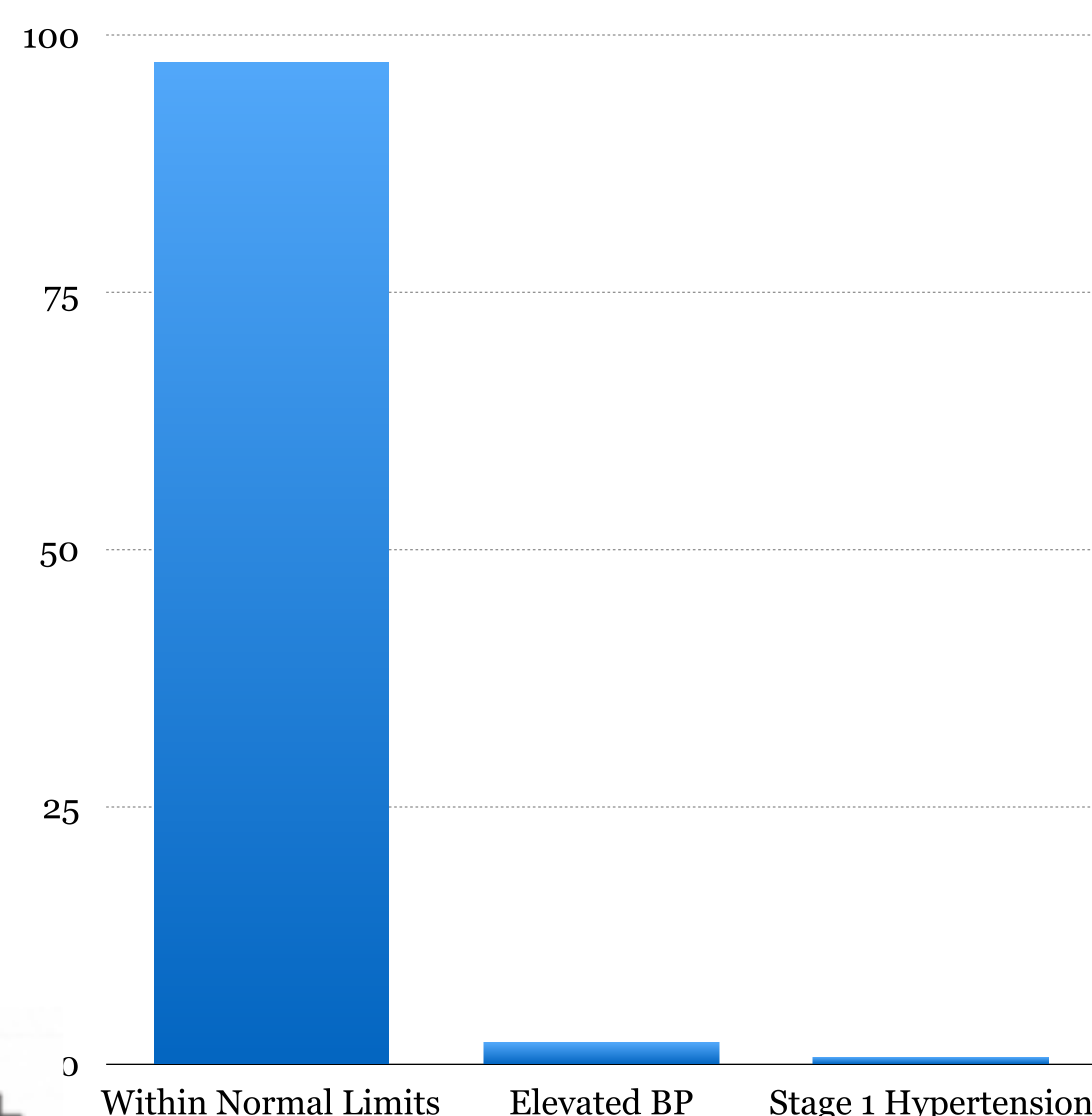


Figure 2: Ethnicities of students

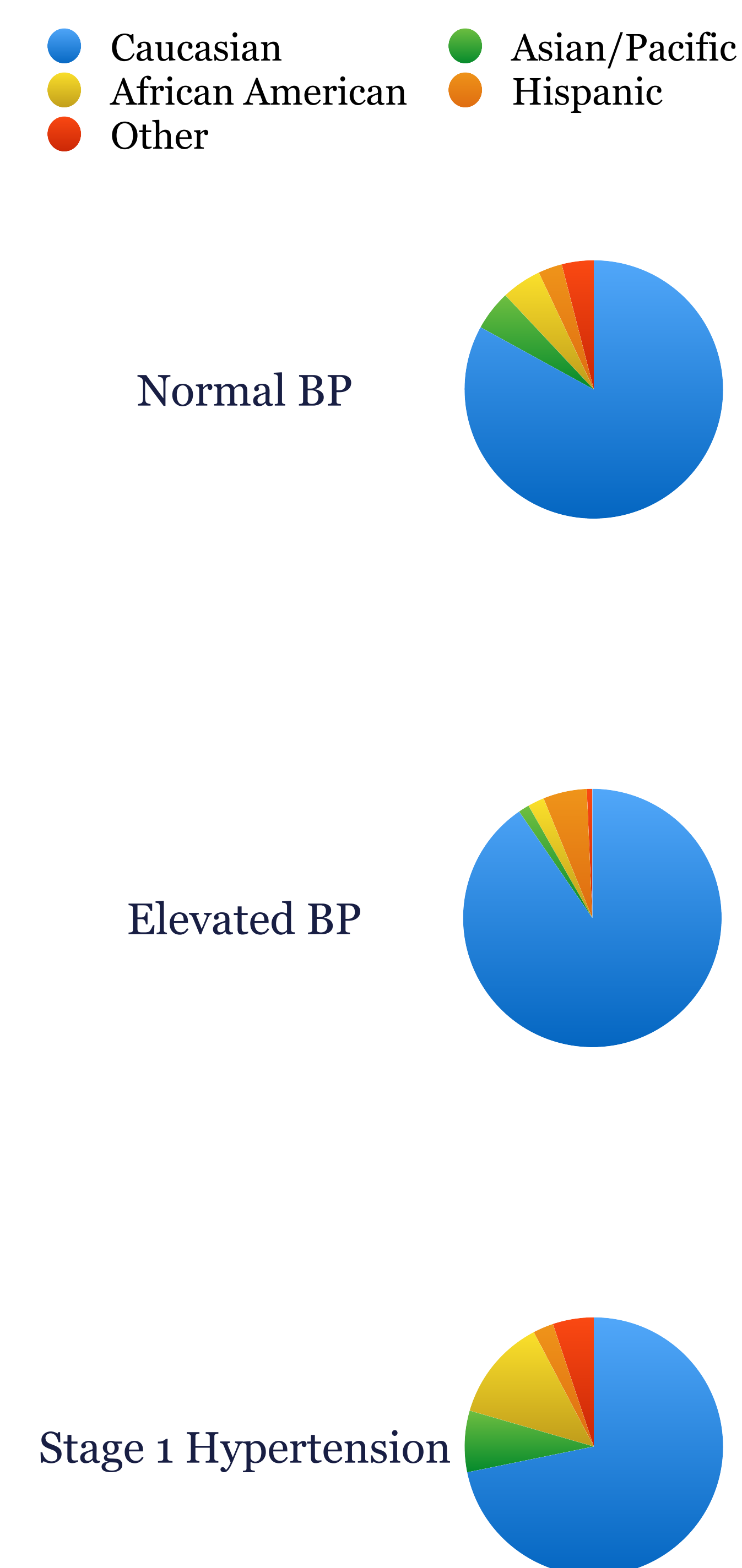


Figure 3: Prevalence of obesity among those with hypertension

