

EFFECT OF RACE CATEGORY REDEFINITION ON HYPERTENSION AND HYPERCHOLESTEROLEMIA PREVALENCE IN THE BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM, 1999 AND 2001

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Race information in the United States is used to identify populations at risk for cardiovascular disease (CVD) or associated risk factors. Behavioral Risk Factor Surveillance System data from 1999 and 2001 were used to examine shifts in racial distributions and CVD risk factors after a multiracial category was added in 2001. We compared age-adjusted, weighted, race-specific prevalence estimates of self-reported high blood pressure (HBP) and high blood cholesterol (HBC) from 1999 and 2001 with descriptive statistics and 95% confidence intervals.

The proportion of non-Hispanic Whites decreased significantly after the multiracial category was added. Overall, the prevalence of HBC did not significantly change, but HBP increased significantly, from 24.2% in 1999 to 25.6% in 2001 ($P < .05$). Among racial groups, only non-Hispanic Whites showed a statistically significant increase in HBP prevalence from 23.1% to 24.4% ($P < .05$); however, larger percentage increases in HBP were seen among non-Hispanic Asian/Pacific Islanders (3.5%) and non-Hispanic Blacks (1.6%). Among non-Hispanic Whites, when combining multiracial respondents whose preferred single race was non-Hispanic White, the prevalence of HBP was significantly higher in 2001 than in 1999. The race-specific prevalence of HBP and HBC was virtually unchanged, whether or not multiracial respondents were included in prevalence estimates. Observed HBP increases for non-Hispanic Whites were not caused by the addition of a multiracial category. In 2001, multiracial respondents had the second highest prevalence of HBP after non-Hispanic Blacks. To promote heart health, we must focus on the needs of this emerging multiracial group and on groups with increasing rates of HBP. (*Ethn Dis.* 2006;16:152–158)

Key Words: High Blood Cholesterol, High Blood Pressure, Race, Risk

BACKGROUND

For decades, race and ethnicity data have been collected and used in medicine and public health to identify US populations with an increased risk for disease or risk behaviors, particularly for chronic diseases such as cardiovascular disease, stroke, and hypertension. Race and ethnicity data have influenced policy decisions, culturally sensitive health programs, legal cases, and research development.¹

Over time, racial categories used by government surveys have changed. However, these defined racial constructs are quickly being blurred by interracial and interethnic marriages in the United States. The increasing emergence of racially mixed people has caused a reexamination of the construct of racial identity as well as the inclusion of ethnicity in data collection instruments in the United States.^{1,2}

In 1997, for the first time, the Office of Management and Budget (OMB) allowed people to select more than one race category on federal data collection surveys to account for the increasing number of people with multiple racial heritages.³ Another change was the separation of the category of Asian/Pacific Islander into two categories: Asian and Native Hawaiian/Other Pacific Islander. These standardized race/ethnic category selections were added to the Behavioral Risk

Factor Surveillance System (BRFSS) in 2001.

We believed that the addition of the multiracial category to the BRFSS in 2001 might have influenced the prevalence of two main cardiovascular risk factors—hypertension and hypercholesterolemia—among the adult population in the United States. Examining any shifts in prevalence could yield important information about the racial/ethnic populations most in need of primary and secondary interventions. Approximately one in four American adults has high blood pressure (HBP), or hypertension,⁴ which is defined as systolic blood pressure (SBP) ≥ 140 mm Hg, diastolic blood pressure (DBP) ≥ 90 mm Hg, or use of an antihypertensive medication.⁵ High blood pressure (HBP) remains a major public health problem, even though effective therapy has been available for > 50 years.^{5,6} High blood pressure (HBP) is a major risk factor for heart disease and stroke, end-stage renal disease, and peripheral vascular disease, as well as a chief contributor to adult disability.⁷

Healthy People 2010 objectives for the nation (objective 12–14) include reducing the proportion of US adults with HBP and increasing the proportion of US adults with controlled blood pressure (BP).⁸ Over the last decade, however, personal awareness of having HBP and prevalence of physician-diagnosed hypertension increased for Blacks, Whites, and Hispanic populations, although both measures were lower in Hispanic populations than in other racial/ethnic groups.^{9,10}

The other major risk factor for heart disease, high blood cholesterol (HBC) or hypercholesterolemia, is defined as

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a total blood cholesterol level ≥ 240 mg/dL, and a borderline-high level is 200–239 mg/dL.⁴ Approximately 37 million American adults have HBC, and ≈ 105 million have total blood cholesterol values ≥ 200 mg/dL. The Healthy People 2010 objective is to reduce the percentage of adults aged ≥ 20 years with high total blood cholesterol levels.⁸ The National Cholesterol Education Program of the National Heart, Lung, and Blood Institute recommends that all persons aged ≥ 20 years have their cholesterol levels checked at least once every five years.¹¹

In this study we examined the effect of the addition of a multiracial category to the BRFSS on cardiovascular health outcomes and risk behaviors, specifically self-reported HBP and self-reported HBC levels. We also examined the cardiovascular risk profiles of respondents in the new multiracial category in the 2001 BRFSS survey.

METHODS

The BRFSS is a state-based telephone survey conducted by state health departments with assistance from the Centers for Disease Control and Prevention. All states, the District of Columbia, Puerto Rico, Guam, and the US Virgin Islands participate in the

surveillance system. The BRFSS uses a multistage cluster design based on random-digit dialing to select a representative sample from each state's or territory's noninstitutionalized civilian residents aged ≥ 18 years. Details of this weighted surveillance tool have been described elsewhere.¹² Data from each state are pooled to produce nationally representative estimates.¹³

In this study, we analyzed BRFSS data from 1999 and 2001 for persons from all US states and territories. We compared age-adjusted prevalence of self-reported hypertension and self-reported hypercholesterolemia by race/ethnicity. In the BRFSS, hypertension was assessed by asking the participant, "Have you ever been told by a doctor, nurse, or other health professional that you have high blood pressure?" Hypercholesterolemia was assessed by asking, "Have you ever been told by a doctor, nurse, or other health professional that your blood cholesterol is high?"

Race/ethnicity categories in the 1999 BRFSS were defined by two questions, "What is your race?" and "Are you of Spanish or Hispanic origin?" Responses were categorized as non-Hispanic White (NH White), non-Hispanic Black (NH Black), non-Hispanic Asian/Pacific Islander (API), non-Hispanic American Indian/Alaska Native (AI/AN), non-Hispanic other (other), and Hispanic. In the 2001 BRFSS, the two questions used to define race/ethnicity categories were changed to, "Are you Hispanic or Latino?" and "Which one or more of the following would you say is your race?" Responses for persons indicating only one race were categorized into the same five race/ethnicity categories used in 1999 (except that the non-Hispanic Asian/Pacific Islander category was separated into two categories: non-Hispanic Asian and non-Hispanic Native Hawaiian/Other Pacific Islander). All persons with more than one race selection were grouped into the new multiracial category, unless

they indicated Hispanic or Latino ethnicity as one of their race/ethnicity selections. An affirmative response to being Hispanic or Latino put the respondent into the Hispanic category regardless of race response. In the 2001 BRFSS, all respondents who indicated multiple races were also asked, "Which one of these groups would you say best represents your race?" The response to this question about single preferred race was used to determine into which original race/ethnicity category the multiracial respondent would have been classified had the multiracial responses been unavailable. To identify any shifts in the race/ethnicity distributions of the study population from 1999 to 2001, and to ascertain whether they were caused by the change in race/ethnicity categories, we examined the single preferred race of respondents classified as multiracial in the 2001 BRFSS.

We used the Multiracial respondents' single preferred race category to recategorize these respondents into the original 1999 categories. We then compared HBP and HBC prevalence among the various racial/ethnic groups before and after performing this recategorization to determine how the overall prevalence and prevalence among non-Hispanic Whites was affected. Data were weighted and analyzed with SAS v8.2 (SAS Institute Inc, Cary, NC) and SUDAAN⁹ (RTI International, Research Triangle Park, NC) statistical software to account for the complex sampling design and to generate prevalence estimates, 95% confidence intervals, and age adjustment. Age adjustments were made by using the five level age distribution for those ≥ 18 years from the 2000 projected US population on the basis of the Census.¹⁴ We used 95% confidence intervals to determine whether or not statistically significant changes in prevalence estimates occurred. All statistical tests were based on a one-sided α significance level of $P < .05$.

RESULTS

Racial/Ethnic Distributions

Our BRFSS study population included 159,989 respondents in 1999 and 212,510 respondents in 2001 (Table 1). Most demographic characteristics of the population changed only slightly from 1999 to 2001. For example, all categories of marital status changed <1%, and employment status decreased .8%. Also, from 1999 to 2001 a <1% increase was seen in fair and poor general health status, and the 25- to 34-year and 45- to 64-year age groups varied slightly ($P<.05$). The proportion of non-Hispanic Whites decreased significantly after the multi-racial category was added, from 73.4% in 1999 to 71.0% in 2001. However, the proportion of all other race/ethnicity groups did not change significantly. Classification of multiracial respondents by single preferred race category showed that most multiracial respondents selected White (57.4%); a substantial proportion classified themselves as Black (16.4%), American Indian/Alaska Native (8.9%), or as having no single race preference (9.1%) (Table 2).

Hypertension Prevalence

The age-adjusted overall prevalence of adults with self-reported HBP increased significantly, from 24.2% in 1999 to 25.6% in 2001 ($P<.05$) (Table 3). In 1999, non-Hispanic Blacks had the highest age-adjusted prevalence of self-reported HBP (35.0%) followed by AI/ANs (30.2%) and others (26.1%) (Table 3). In 2001, non-Hispanic Blacks continued to have the highest age-adjusted prevalence of self-reported HBP (36.6%) followed by multiracial respondents (29.1%), and AI/ANs (28.3%). The new multiracial group demonstrated an unexpectedly high prevalence of hypertension. Of all the racial/ethnic groups, only non-Hispanic Whites had a statistically significant increase (1.3%) in prevalence of self-reported HBP ($P<.05$). Nevertheless,

Table 1. Age-adjusted distribution of selected characteristics among adults aged ≥ 18 years before and after race/ethnicity categories were redefined

Characteristic	Survey Year			
	1999 (N=159,989)		2001 (N=212,510)	
	%	(95% CI*)	%	(95% CI)
Self-reported race/ethnicity				
NH† White	73.4	(73.0–73.8)	71.0†	(70.5–71.5)
NH Black/African American	9.7	(9.5–10.0)	9.5	(9.2–9.7)
NH Asian/Pacific Islander (total)	2.3	(2.2–2.5)	3.0†	(2.8–3.2)
NH Asian	N/A§	N/A	2.6	(2.5–2.7)
NH Native Hawaiian/Other Pacific Islander	N/A	N/A	0.3	(0.3–0.4)
NH American Indian/Alaska Native	.9	(.8–1.0)	1.1	(1.0–1.2)
NH Other	.7	(.6–.8)	.9	(.8–.9)
NH Multiracial	N/A	N/A	1.5	(1.4–1.6)
Hispanic	12.9	(12.6–13.2)	13.1	(12.6–13.5)
Sex				
Male	48.0	(47.6–48.4)	48.1	(47.7–48.5)
Female	52.0	(51.6–52.4)	51.9	(51.5–52.3)
Age (years)				
18–24	12.5	(12.2–12.8)	12.7	(12.4–13.0)
25–34	19.1	(18.9–19.5)	18.4†	(18.1–18.7)
35–44	21.4	(21.0–21.7)	20.7	(20.4–21.0)
45–64	29.3	(28.9–29.6)	30.6†	(30.3–31.0)
≥ 65	17.8	(17.5–18.1)	17.5	(17.3–17.8)
Marital status				
Married	58.5	(58.1–58.9)	58.8	(58.4–59.1)
Divorced	10.0	(9.7–10.2)	10.0	(9.7–10.1)
Widowed	7.4	(7.2–7.6)	7.1	(6.9–7.2)
Separated	2.3	(2.2–2.4)	2.3	(2.2–2.4)
Never married	19.1	(18.7–19.4)	19.5	(19.1–19.8)
Unmarried partner	2.7	(2.6–2.9)	3.5†	(3.3–3.6)
Education				
<12 years	14.0	(13.6–14.3)	13.1†	(12.8–13.4)
12 years	32.4	(32.0–32.8)	30.8†	(30.5–31.2)
13–15 years	26.7	(26.3–27.0)	27.1	(26.8–27.4)
≥ 16 years	27.0	(26.6–27.3)	29.0†	(28.6–29.3)
Employment status				
Employed for wages	55.5	(55.1–55.9)	54.7	(54.3–55.1)
Self-employed	7.6	(7.4–7.8)	8.3†	(8.1–8.5)
Unemployed	3.9	(3.81–4.1)	4.4†	(4.2–4.5)
Student/unable to work	7.6	(7.3–7.8)	8.3†	(8.1–8.5)
Homemaker	7.8	(7.6–8.0)	7.7	(7.5–7.9)
Retired	17.5	(17.2–17.8)	16.7†	(16.4–16.9)
General health status				
Excellent	22.9	(22.6–23.2)	22.1†	(21.8–22.4)
Very good	33.1	(32.7–33.5)	32.7	(32.4–33.1)
Good	29.0	(28.7–29.4)	29.5	(29.1–29.8)
Fair	11.0	(10.8–11.3)	11.6	(11.3–11.8)
Poor	3.9	(3.8–4.1)	4.1	(4.0–4.3)

Data are from the Behavioral Risk Factor Surveillance System, 1999 and 2001.

* CI=confidence interval.

† NH=non-Hispanic.

‡ $P<.05$.

§ N/A=not applicable.

Table 2. Age-adjusted distribution of non-Hispanic multiracial respondents in single preferred race categories

Single Preferred Race Category	%	(95% CI*)
White	57.4	(55.9–58.9)
Black	16.4	(15.3–17.6)
Asian	.6	(.3–.9)
Native Hawaiian/Other Pacific Islander	4.2	(3.7–4.7)
American Indian/Alaska Native	8.9	(7.9–9.8)
Other	3.5	(3.0–4.0)
No preference	9.1	(8.2–10.0)

Data are from the Behavioral Risk Factor Surveillance System, 2001. N=3,379.

* CI=confidence interval.

APIs had a 3.2% increase and non-Hispanic Blacks had a 1.6% increase in the age-adjusted prevalence of self-reported HBP, while persons who indicated their racial/ethnic group as other had a 3.3% decrease. None of these changes were statistically significant.

Hypercholesterolemia Prevalence

The overall prevalence of HBC also increased significantly, from 27.2% in 1999 to 28.2% in 2001 ($P<.05$) (Table 3). In 1999, APIs and AI/ANs had the highest age-adjusted preva-

lence of self-reported HBC (31.4% and 31%) followed by respondents identified as others (28.3%) and NH Whites (27.6%) (Table 3). In 2001, APIs and AI/ANs continued to have the highest age-adjusted prevalence of self-reported HBC (29.5% and 29%, respectively) followed by NH Whites (28.5%), Hispanics (27.5%), and multiracial respondents (27.4%). Among race groups, increases were seen in HBC prevalence among NH Whites (0.9%), NH Blacks (0.7%), and Hispanics (0.6%), though none were statistically significant. Although not statistically significant, decreases from 1999 to 2001 were observed in age-adjusted, self-reported prevalence of HBC among those identified as others (5.4%), AI/ANs (2%), and APIs (1.9%).

Table 3. Age-adjusted prevalence of cardiovascular risk factors before and after redefinition of race/ethnicity categories

Cardiovascular Risk Factor	Survey Year				Absolute Percent Change
	1999 (N=159,989)		2001 (N=212,510)		
	Percent	(95% CI*)	Percent	(95% CI)	
Ever been told high blood pressure					
Race/ethnic category					
All races	24.2	(23.9–24.5)	25.6†	(25.3–25.8)	1.4
NH‡ White	23.1	(22.8–23.5)	24.4†	(24.1–24.8)	1.3
NH Black	35.0	(33.8–36.2)	36.6	(35.5–37.7)	1.6
NH Asian/Pacific Islander§	18.7	(15.7–21.8)	21.9	(19.0–24.8)	3.2
NH American Indian/Alaska Native	30.2	(26.1–34.3)	28.3	(24.6–31.9)	1.9
NH Other	26.1	(21.6–30.7)	22.8	(19.9–25.7)	3.3
NH Multiracial	N/A	N/A	29.1	(26.8–31.4)	N/A
Hispanic	23.5	(22.1–24.9)	24.2	(22.9–25.5)	0.7
Ever been told high cholesterol					
Race/ethnic category					
All races	27.2	(27.0–27.9)	28.2	(27.8–28.6)	1.0
NH White	27.6	(27.1–28.1)	28.5	(28.1–28.9)	0.9
NH Black	26.1	(24.7–27.4)	26.8	(25.6–28.0)	0.7
NH Asian/Pacific Islander	31.4	(27.4–35.4)	29.5	(26.0–33.0)	1.9
NH American Indian/Alaska Native	31.0	(26.6–35.4)	29.0	(25.0–33.0)	2.0
NH Other	28.3	(22.8–33.8)	22.9	(19.6–26.2)	5.4
NH Multiracial	N/A	N/A	27.4	(24.5–30.3)	N/A
Hispanic	26.9	(25.3–28.5)	27.5	(25.9–29.0)	0.6

Data are from the Behavioral Risk Factor Surveillance System, 1999 and 2001.

* CI=confidence interval.

† $P<.05$.

‡ NH=non-Hispanic.

§ NH Asian/Pacific Islander category became two categories in 2001 (NH Asian and NH Native Hawaiian/Other Pacific Islander), but the total for the two categories is shown here.

|| N/A=not applicable.

Table 4. Age-adjusted prevalence of cardiovascular risk factors after reclassifying Multiracial respondents into single preferred race groups

Cardiovascular Risk Factor	Survey Year				Absolute Percent Change
	1999 (N=159,989)		2001 (N=212,510)		
	Percent	(95% CI*)	Percent	(95% CI)	
Ever been told high blood pressure					
Race/ethnic category					
NH [†] White	23.1	(22.8–23.5)	24.5 [‡]	(24.2–24.8)	1.4
NH Black	35.0	(33.8–36.2)	36.5	(35.5–37.6)	1.5
NH Asian/Pacific Islander [§]	18.7	(15.7–21.7)	21.9	(19.0–24.8)	3.2
NH American Indian/Alaska Native	30.2	(26.1–34.3)	28.4	(25.0–31.9)	1.8
NH Other	26.1	(21.6–30.7)	23.1	(20.3–36.0)	3.0
No preference	N/A	N/A	24.8	(17.3–32.3)	N/A
Hispanic	23.5	(22.1–24.9)	24.3	(22.9–25.6)	0.8
Ever been told high cholesterol					
Race/ethnic category					
NH White	27.6	(27.1–28.1)	28.5	(28.1–28.9)	0.9
NH Black	26.1	(24.7–27.4)	26.8	(25.5–28.0)	0.7
NH Asian/Pacific Islander	31.4	(27.4–35.4)	29.3	(25.8–32.8)	2.1
NH American Indian/Alaska Native	31.0	(26.6–35.4)	29.7	(25.7–33.7)	1.3
NH Other	28.3	(22.8–33.8)	23.0	(19.8–26.2)	5.3
No preference	N/A	N/A	27.6	(18.4–36.9)	N/A
Hispanic	26.9	(25.3–28.5)	27.4	(25.9–29.0)	0.5

Data are from the Behavioral Risk Factor Surveillance System, 1999 and 2001.

* CI=confidence interval.

† NH=non-Hispanic.

‡ $P<.05$.

§ NH Asian/Pacific Islander category became two categories in 2001 (NH Asian and NH Native Hawaiian/Other Pacific Islander), but the total for the two categories is shown here.

|| N/A=not applicable.

Recategorization of Multiracial Respondents

When the multiracial respondents were recategorized into their preferred single-race categories, the prevalence of self-reported hypertension and hypercholesterolemia among non-Hispanic

Whites remained significantly higher in 2001 than in 1999. Prevalence estimates for non-Hispanic Whites did not change when multiracial respondents were included as a category (24.4%) or when they were recategorized by single preferred race (24.5%)

(Tables 3 and 4). In addition, the prevalence of HBP and HBC among all other racial/ethnic groups did not change significantly from 1999 to 2001; the prevalence estimates remained nearly unchanged. When multiracial respondents were reclassified into single-race

Table 5. Age-adjusted prevalence of cardiovascular risk factors by non-Hispanic multiracial respondents' single preferred race category

Single Preferred Race Category	Cardiovascular Risk Factor			
	Ever Been Told High Blood Pressure		Ever Been Told High Cholesterol	
	%	(95% CI*)	%	(95% CI)
White	29.0	(26.0–31.9)	28.4	(24.8–32.0)
Black	32.1	(25.4–38.9)	24.8	(17.7–32.0)
Asian	21.2	(9.2–33.1)	22.7	(8.1–37.3)
Native Hawaiian/Other Pacific Islander	25.9	(19.3–32.6)	21.1	(14.7–27.6)
American Indian/Alaska Native	30.5	(23.0–37.9)	32.9	(21.5–44.3)
Other	31.3	(18.9–43.6)	24.6	(13.7–35.4)
No preference	24.8	(17.3–32.3)	27.6	(18.4–36.9)

Data are from the Behavioral Risk Factor Surveillance System, 2001. N=3,379.

* CI=confidence interval.

Our research indicates that most (57.4%) of those who reclassified themselves as multiracial in 2001 would have previously categorized themselves as non-Hispanic White in 2000.

categories, the prevalence of hypertension among them was dissimilar to the distribution of hypertension among the original single-race groups (Table 5). The differences were not as notable for hypercholesterolemia.

DISCUSSION

Our study revealed that in 2001, multiracial adults in the United States had a higher prevalence of hypertension than adults of all other races except non-Hispanic Blacks. This higher prevalence of a leading cardiovascular disease risk factor among multiracial respondents indicates that attention should be paid to tailoring culturally sensitive interventions for multiracial people. The creation of a new multiracial category in the BRFSS allows the monitoring of an emerging group with poor health risk profiles similar to or exceeding those of other minority groups.

Our research indicates that most (57.4%) of those who reclassified themselves as multiracial in 2001 would have previously categorized themselves as non-Hispanic White in 2000. Despite this statistically significant shift in racial distribution, observed increases from 1999 to 2001 in self-reported hypertension for non-Hispanic Whites do not appear to be caused by the redefinition of racial/ethnic categories. Hence, the observed significant increase in prevalence of self-reported hypertension and

hypercholesterolemia among non-Hispanic Whites appears to be a true estimate, independent of race-category changes.

The significant increase in hypertension and hypercholesterolemia among non-Hispanic Whites, despite a lower prevalence of disease in this group than in other racial groups, is cause for concern. Moreover, the even larger percentage increases in prevalence of hypertension, despite a lack of statistical significance, among Asian/Pacific Islanders and non-Hispanic Blacks indicates an enduring and growing problem among these communities. Even though HBP usually has no signs or symptoms, it can be harmful if left untreated or uncontrolled. Preventing and managing HBP ("the silent killer") are major public health challenges. The incidence of heart disease, renal disease, and stroke could be greatly reduced if chronic increases in blood pressure were prevented. Recommendations in the JNC 7 report advise healthcare providers in the screening, detection, treatment, and follow-up care of people with borderline-high HBP levels or hypertension.⁵

Increased public health and clinical efforts are needed to improve HBP prevention and control through such measures as increasing physical activity, making nutritional changes (such as reducing sodium and fat intake), engaging in weight reduction or management, and reducing stress. Also needed are routine blood pressure screening among all US adults and treatment and control of HBP among people with hypertension. The use of blood pressure surveillance data to identify populations at risk for hypertension and subsequent complications, as well as populations with poorly treated and controlled hypertension, is also imperative for monitoring and evaluating primary and secondary intervention methods.

The significant increase in HBC from 1999 to 2001 for non-Hispanic Whites is also troubling. High blood cholesterol is a modifiable risk factor

for heart disease that can be prevented or controlled. The benefits of lowering cholesterol include a decreased incidence of coronary heart disease and a decline in mortality among those with or without coronary heart disease.¹⁵⁻¹⁷

The findings in this report are subject to several limitations. First, BRFSS data are self-reported, and some respondents may have over- or underestimated their HBP or HBC status. Patients may have been unaware that they had HBP or HBC, and thus the prevalence of these conditions may have been underestimated. Additionally, the cut-point used by healthcare providers for diagnosing HBP or HBC is unknown, and patients with borderline hypertension may have been told that their blood pressure was high. Likewise, some patients with borderline-high cholesterol levels may have been told that their cholesterol level was high. This misclassification may have resulted in an overestimate of true HBC prevalence. Second, BRFSS is a telephone-based survey, and persons with lower socioeconomic status may be underrepresented because they are less likely than more affluent persons to have a telephone. Third, differential screening for HBP and HBC among non-Hispanic Whites compared with screening among people of other races cannot be accounted for in this analysis.

Our study suggests that more state-level research on cardiovascular risk factors should be conducted in a substantial multiracial population. Moreover, health professionals should be made aware of the health needs of multiracial people, a rapidly increasing population in the United States. Public health professionals need to develop and implement preventative programs that are tailored to the cultural needs of this diverse group. Cardiovascular disease remains a leading cause of death in the United States, and adequate programs for all segments of the population are needed. To promote heart health, we

must focus not only on groups with a high prevalence of hypertension and hypercholesterolemia, but also on those with increasing prevalence rates.

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