

ORIGINAL RESEARCH

Workers' Health Risk Behaviors by State, Demographic Characteristics, and Health Insurance Status

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Abstract

Introduction

Employers often lack data about their workers' health risk behaviors. We analyzed state-level prevalence data among workers for 4 common health risk behaviors: obesity, physical inactivity, smoking, and missed influenza vaccination (among workers older than 50 years).

Methods

We analyzed 2007 and 2008 Behavioral Risk Factor Surveillance System data, restricting the sample to employed respondents aged 18 to 64 years. We stratified health risk behavior prevalence by annual household income, educational attainment, health insurance status, and race/ethnicity.

Results

For all 4 health risk behaviors, we found significant differences across states and significant disparities related to social determinants of health — income, education, and race/ethnicity. Among uninsured workers, prevalence of smoking was high and influenza vaccinations were lacking.

Conclusion

In this national survey study, we found that workers'

health risk behaviors vary substantially by state and by workers' socioeconomic status, insurance status, and race/ethnicity. Employers and workplace health promotion practitioners can use the prevalence tables presented in this article to inform their workplace health promotion programs.

Introduction

Health risk behaviors are common among workers, are strongly related to chronic illness and death, increase health care costs, and reduce productivity (1). One key to a successful workplace health promotion program is to measure workers' baseline health needs and use the data to inform the program (2,3). However, most employers do not have access to data about their workers' health behaviors. Many midsized and small employers lack the resources to conduct health risk appraisals (HRAs). In addition, employer-run HRAs often have low response rates and overrepresent healthy workers (4).

Readily available data about risk behaviors could help employers plan and evaluate their workplace health promotion programs. Obesity, physical inactivity, and tobacco use are 3 of the most common lifestyle health risk behaviors in the United States (5,6) and cause approximately one-third of all deaths (7). Influenza vaccination is also of interest to employers because influenza leads to lost productivity and can trigger severe pulmonary and cardiovascular diseases. Vaccination reduces the incidence of influenza and can save employers money in a short time frame (1 year or less) (8).

The objective of this study was to provide employers and other workplace health promotion practitioners with



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state-specific data for these 4 health risk behaviors (obesity, physical inactivity, smoking, and no influenza vaccination [among workers older than 50 years]) among workers. We stratified the behaviors by insurance status and social determinants of health: annual household income, educational attainment, and race/ethnicity. To meet this objective, we show the prevalence of each health risk behavior by state and workers' characteristics, using data from the 2007 and 2008 Behavioral Risk Factor Surveillance System (BRFSS), the most recent data available.

Methods

Design

We conducted a cross-sectional study by using BRFSS data collected in 2007 and 2008. With assistance from the Centers for Disease Control and Prevention (CDC), state health departments conduct BRFSS surveys among US resident civilian, noninstitutionalized adults aged 18 years or older in all 50 states, the District of Columbia, and US territories (9).

Using a multistage cluster design, BRFSS selects state-specific probability samples of households to produce a nationally representative sample (5). After calling a selected home telephone number, the interviewer randomly chooses 1 adult in that household to complete the telephone interview. BRFSS data are weighted by race/ethnicity, age, and sex distributions found in each state, along with the respondent's probability of selection.

Sample

The median cooperation rate, or the proportion of all respondents interviewed from all eligible units in which a respondent was selected and contacted, was 72.1% in 2007 and 75.0% in 2008 (10,11). Our study population included employed adults aged 18 to 64 years in 50 states and the District of Columbia. We considered adults *employed* if they were employed for wages or self-employed. We excluded adults older than 64 years because Medicare is available for most of this group.

Measures

The BRFSS questionnaire has 3 parts: core questions, optional modules, and state-added questions. All states

must ask core questions every year or every other year. States may also choose optional modules or add their own questions to meet their specific data needs. Both English- and Spanish-language versions of the survey are provided to each state.

In this article, all data are from the core questions used in every state. The health risk behaviors are lifestyle behaviors (obesity, physical inactivity, and smoking) and no influenza vaccination in the past year. Obesity is defined as having a body mass index of at least 30 kg/m² (12). Physical inactivity is defined as not meeting the CDC physical activity guideline of at least 5 days per week for 30 minutes per day of moderate-intensity activity or at least 3 days per week for 20 minutes a day of vigorous-intensity activity (13,14). Tobacco use is defined as ever having smoked at least 100 cigarettes and currently smoking every day or some days. Workers aged 50 to 64 years who reported no influenza vaccination in the past 12 months (either by injection or nasal spray) were defined as not vaccinated. We restricted the influenza vaccination analysis to workers older than age 50 because CDC's Advisory Committee on Immunization Practices recommends influenza vaccination for those adults (15).

We analyzed workers' socioeconomic status (SES), race/ethnicity, health insurance status, and health risk behaviors. The SES measures are annual household income and educational attainment as reported in the BRFSS data. We used 2007 BRFSS data for the physical inactivity measure because these questions were not included in the 2008 survey. We used 2008 data for the rest of the measures.

Analysis

We calculated national and state rates for workers stratified by 1) annual household income (<\$35,000, \$35,000-\$74,999, ≥\$75,000), 2) educational attainment (high school graduate or less, some college, college graduate), 3) health insurance (any, none), and 4) race/ethnicity (African American, American Indian/Alaska Native, Asian/Hawaiian/Pacific Islander, Hispanic, and white). We identified the national prevalence of each health risk behavior among workers, the range across states, and the range across states for characteristics associated with the highest risk behavior prevalence nationally.

Our analysis took into account the survey design and

weighted sampling probabilities of the data source and was performed by using Stata version 10.0 (StataCorp LP, College Station, Texas). All the statistical tests were 2-sided and significance was set at $P < .05$. We calculated 95% confidence intervals (CIs) for all prevalence rates (versions of the tables with CIs are available from the corresponding author on request). Because of the very small numbers of respondents in some categories, we restricted the prevalence estimates to the categories in which there were 50 or more respondents.

Results

Final sample

There were 430,912 respondents in the 2007 BRFSS, and 414,509 respondents in the 2008 BRFSS. When we restricted our data sample to employed respondents aged 18 to 64 years, 48.3% of the 2007 sample (physical inactivity) and 47.5% of the 2008 sample (obesity, smoking, and influenza vaccination) remained. For each of the analyses described below, we excluded respondents who were missing data for the health risk behavior under study; therefore, the number of subjects varies slightly across the analyses. We further excluded respondents who were missing data for SES, insurance status, or race/ethnicity from all analyses stratified by these characteristics (8.3% in 2007 and 8.0% in 2008 were missing 1 or more of these variables). Thus, of the respondents who met our employment and age criteria, we were able to include more than 85% in our analyses (range: 87.0% for physical activity to 91.8% for smoking).

Obesity

In 2008, 27.0% of employed adults in the United States were obese (Table 1); obesity rates were lowest in Colorado (19.5%) and were highest in West Virginia (34.6%). Nationally, the highest obesity rates were reported by those with annual household incomes less than \$35,000 (30.2%), those who did not graduate from college (30.5%), and African Americans (37.3%). Obesity rates among workers with these characteristics varied significantly across states, from 21.8% (95% CI, 18.3%-25.2%) in Colorado to 39.2% (95% CI, 35.0%-43.4%) in Mississippi for low-income workers; from 23.5% (95% CI, 21.0%-26.1%) in Massachusetts to 39.1% (95% CI, 33.1%-45.1%) in Tennessee among workers with a high school education

or less; and from 17.9% (95% CI, 6.5%-29.4%) in Nevada to 49.9% (95% CI, 33.3%-66.4%) in Nebraska for African American workers.

Physical inactivity

In 2007, 49.2% of employed adults did not meet physical activity recommendations (Table 2); physical inactivity rates were lowest in Alaska (37.2%) and highest in Louisiana (58.4%). Nationally, the highest physical inactivity rates were reported by workers with household incomes less than \$35,000 (54.3%), high school education or less (52.5%), and Asians/Hawaiians/Pacific Islanders (63.1%). Physical inactivity rates for workers with these characteristics varied significantly across states, from 42.5% (95% CI, 37.8%-47.2%) in Montana to 68.7% (95% CI, 63.0%-74.3%) in Tennessee for low-income workers; from 36.1% (95% CI, 29.4%-42.8%) in Alaska to 61.0% (95% CI, 57.0%-65.1%) in Louisiana for workers with a high school education or less; and from 40.1% (95% CI, 22.1%-58.1%) in Pennsylvania to 70.2% (95% CI, 63.3%-77.1%) in California for Asian/Hawaiian/Pacific Islander workers.

Smoking

In 2008, 19.2% of employed adults reported that they currently smoke cigarettes (Table 3); smoking rates were lowest in Utah (9.8%) and highest in Indiana (27.6%). Nationally, the highest smoking rates were reported by workers with household incomes less than \$35,000 (28.9%), high school education or less (29.3%), no health insurance (32.5%), and American Indians/Alaska Natives (27.8%). Among workers with these characteristics, smoking rates varied significantly across states, from 15.3% (95% CI, 11.1%-19.5%) in Utah to 45.6% (95% CI, 38.4%-52.8%) in Indiana for low-income workers; from 17.6% (95% CI, 14.2%-21.0%) in Utah to 41.1% (95% CI, 35.7%-46.5%) in Indiana for workers with high school education or less; from 13.8% (95% CI, 9.1%-18.5%) in Utah to 54.9% (95% CI, 45.9%-63.9%) in Indiana for uninsured workers; and from 10.9% (95% CI, 2.3%-19.5%) in Arizona to 53.1% (95% CI, 32.6%-73.5%) in North Dakota for American Indian/Alaska Native workers.

No influenza vaccination

In 2008, 59.3% of workers aged 50 to 64 years reported no influenza vaccination (Table 4); the lowest rate was in South Dakota (47.1%) and the highest was in Nevada

(71.4%). Nationally, workers most likely to report no influenza vaccination had household income less than \$35,000 (68.6%), high school education or less (66.3%), no health insurance (77.1%), and were Hispanic (67.1%). Among workers with these characteristics, rates of no influenza vaccination varied significantly across states, from 49.0% in Virginia (95% CI, 36.3%-61.7%) to 83.3% (95% CI, 77.1%-89.4%) in Nevada for low-income workers; from 51.6% (95% CI, 46.6%-56.6%) in South Dakota to 82.0% (95% CI, 75.5%-88.5%) in Nevada for workers with a high school education or less; from 59.5% (95% CI, 47.6%-71.4%) in Iowa to 90.2% (95% CI, 83.3%-97.1%) in Indiana for uninsured workers; and from 50.9% (95% CI, 34.7%-67.0%) in Hawaii to 84.3% (95% CI, 75.0%-93.6%) in Nevada for Hispanic workers.

Discussion

The most effective workplace health promotion efforts are tailored to the risk behaviors and needs of the workers (2,3). However, for many employers, data describing their workers are unavailable or unrepresentative of their workforce (4,16). To address this need, we used BRFSS data, a very large, recent data set of employed adults in the United States, and calculated prevalence for 4 common health risk behaviors stratified by state and by the worker characteristics that employers routinely collect to describe their workforce.

In this national sample of employed adults aged 18 to 64 years, we found significant disparities related to SES and race/ethnicity for all 4 health risk behaviors and significant disparities by insurance status for smoking and influenza vaccination. We also found significant variations in health risk behaviors within and across states. Our findings both replicate and extend our prior study of employed workers' health risk behaviors, which found significant disparities by SES and race/ethnicity among insured workers (6). The findings make state-level data for workers available for the first time, include uninsured workers, and show that disparities are worse for the uninsured for influenza vaccination and tobacco use than for obesity and physical inactivity.

Limitations

Our study and prevalence tables have several limitations. First, BRFSS includes only people who have home

telephones and speak either English or Spanish. Second, all of the health risk behaviors are self-reported. These 2 limitations suggest that our results may underreport the prevalence of workers' health risk behaviors. Third, in many states, fewer than 50 members of some racial/ethnic groups were included in the sample, and we were not able to present health risk behavior rates in these cases. In other states, we were able to present health risk behavior rates for every racial/ethnic group, but some of the confidence intervals are wide because of small numbers in these groups. Fourth, our study was cross-sectional; our findings show associations between characteristics and health risk behaviors but not causation.

An important limitation of our study is that the prevalence tables are at the state rather than the local level. As such, they cannot provide employers with as accurate a view of their workers' health risk behaviors as they could achieve by surveying their workers. For many employers, acquiring health behavior data from their own workers is often not feasible. Finally, our findings do not address the time and financial challenges employers face in implementing workplace health promotion programs. However, our findings can serve employers by 1) providing data on the health risks of workers in their state with similar characteristics to those of their own workforce (comparable to the intent of county health-ranking systems that motivate policy makers to take action to improve health risks in their counties [17]) and 2) serving as a planning tool for an individual employer's health promotion efforts.

Conclusion

To our knowledge, this is the first time that state-level BRFSS tables summarizing health risk behaviors of the US *employed* population have been made available. We found significant differences in workers' health behaviors across states and within states, depending on their SES, insurance status, and race/ethnicity. Employers, workplace health promotion professionals, insurers, and vendors can use these tables to inform workplace health promotion planning when data for a given employer's workers are not available.

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Tables

Table 1. Prevalence of Obesity^a by State Among Workers Aged 18 to 64 Years, 2008 Behavioral Risk Factor Surveillance System (BRFSS)

| State | No. of Respondents ^c | Prevalence of Obesity ^b , % | | | | | | | | | | | | | |
|----------------------|---------------------------------|--|-----------------------------|---------------|---------|------------------------------|--------------|------------------|-------------------------|------|----------------|------------------|---------------------------------|-------------------------------|----------|
| | | Overall | Annual Household Income, \$ | | | Educational Attainment | | | Health Insurance Status | | Race/Ethnicity | | | | |
| | | | <35,000 | 35,000-74,999 | ≥75,000 | High School Graduate or Less | Some College | College Graduate | Any | None | White | African American | Asian/Hawaiian/Pacific Islander | American Indian/Alaska Native | Hispanic |
| Alabama | 2,561 | 32.3 | 37.2 | 36.4 | 26.7 | 35.0 | 35.9 | 26.7 | 32.9 | 29.4 | 30.3 | 39.1 | — | — | — |
| Alaska | 1,631 | 25.3 | 25.2 | 25.7 | 26.5 | 26.9 | 28.6 | 20.4 | 27.5 | 15.8 | 25.8 | — | — | 34.0 | 9.4 |
| Arizona | 2,214 | 25.7 | 26.2 | 32.1 | 23.2 | 29.6 | 24.8 | 23.1 | 25.3 | 27.5 | 22.7 | — | — | 49.5 | 31.5 |
| Arkansas | 2,369 | 30.8 | 34.1 | 33.9 | 25.9 | 33.7 | 31.0 | 27.3 | 31.1 | 30.1 | 30.4 | 37.0 | — | — | 30.8 |
| California | 5,258 | 24.5 | 27.5 | 26.5 | 21.3 | 28.9 | 27.0 | 18.5 | 24.1 | 26.5 | 23.2 | 33.3 | 7.5 | — | 29.3 |
| Colorado | 5,946 | 19.5 | 21.8 | 20.0 | 18.2 | 23.7 | 22.4 | 15.1 | 19.3 | 20.6 | 18.2 | 27.6 | 5.7 | — | 25.4 |
| Connecticut | 2,884 | 20.6 | 24.3 | 22.2 | 19.6 | 24.7 | 22.8 | 17.5 | 20.6 | 19.4 | 19.8 | 30.2 | 9.7 | — | 28.9 |
| Delaware | 1,934 | 29.0 | 36.4 | 32.0 | 24.8 | 33.4 | 34.8 | 22.7 | 28.2 | 39.0 | 25.7 | 47.6 | — | — | 46.8 |
| District of Columbia | 2,170 | 20.9 | 28.4 | 26.8 | 15.9 | 32.3 | 36.9 | 14.1 | 20.5 | 26.1 | 9.6 | 34.4 | — | — | 19.9 |
| Florida | 4,353 | 25.0 | 30.3 | 23.7 | 24.8 | 32.4 | 25.8 | 18.4 | 25.1 | 24.1 | 23.5 | 33.2 | — | — | 28.3 |
| Georgia | 2,650 | 27.6 | 32.3 | 28.6 | 24.8 | 32.0 | 34.7 | 20.6 | 27.4 | 29.1 | 24.2 | 39.1 | — | — | 27.5 |
| Hawaii | 3,466 | 23.2 | 25.0 | 23.9 | 21.6 | 27.4 | 25.2 | 18.6 | 23.4 | 20.2 | 19.0 | — | 17.4 | — | 29.2 |
| Idaho | 2,382 | 26.1 | 29.2 | 26.2 | 23.7 | 25.2 | 32.8 | 21.2 | 25.7 | 27.7 | 25.3 | — | — | — | 26.3 |
| Illinois | 2,494 | 27.9 | 33.3 | 29.8 | 24.4 | 31.4 | 32.9 | 22.2 | 26.5 | 36.0 | 25.6 | 38.9 | 15.8 | — | 33.8 |
| Indiana | 2,299 | 26.7 | 26.0 | 30.0 | 25.8 | 24.9 | 31.3 | 25.6 | 28.1 | 20.4 | 27.5 | 36.5 | — | — | 15.0 |
| Iowa | 3,069 | 27.2 | 35.1 | 28.4 | 23.2 | 29.9 | 30.4 | 21.8 | 27.1 | 28.5 | 26.9 | — | — | — | 34.6 |
| Kansas | 4,352 | 29.3 | 31.1 | 32.5 | 26.6 | 31.4 | 31.7 | 26.1 | 29.8 | 24.4 | 28.8 | 48.5 | — | — | 33.2 |
| Kentucky | 3,225 | 31.0 | 36.7 | 32.2 | 26.4 | 32.8 | 32.3 | 28.1 | 30.6 | 31.5 | 30.0 | 48.5 | — | — | — |
| Louisiana | 2,738 | 29.4 | 33.3 | 34.8 | 24.6 | 32.7 | 31.4 | 24.8 | 29.4 | 29.0 | 26.6 | 35.3 | — | — | 35.9 |
| Maine | 3,267 | 26.4 | 27.8 | 29.7 | 22.5 | 30.7 | 30.8 | 20.2 | 26.2 | 27.9 | 26.5 | — | — | — | — |
| Maryland | 4,787 | 26.3 | 29.6 | 27.8 | 25.3 | 29.7 | 31.8 | 22.1 | 26.3 | 26.4 | 23.4 | 35.2 | 18.8 | — | 22.9 |
| Massachusetts | 10,188 | 21.6 | 23.3 | 23.8 | 20.3 | 23.5 | 25.9 | 18.6 | 21.7 | 20.2 | 21.6 | 28.2 | 4.5 | — | 26.0 |
| Michigan | 3,918 | 28.9 | 31.9 | 31.9 | 25.6 | 30.2 | 33.9 | 24.0 | 28.8 | 29.4 | 28.3 | 43.6 | — | — | 19.8 |
| Minnesota | 2,299 | 25.2 | 29.0 | 25.9 | 24.1 | 27.1 | 27.9 | 22.4 | 26.0 | 16.2 | 25.6 | 23.3 | — | — | — |
| Mississippi | 3,181 | 34.5 | 39.2 | 35.6 | 28.6 | 36.3 | 36.1 | 30.9 | 34.2 | 35.2 | 31.3 | 41.4 | — | — | 42.0 |
| Missouri | 2,314 | 30.6 | 31.3 | 32.5 | 27.7 | 29.4 | 36.0 | 27.9 | 30.6 | 31.4 | 29.9 | 34.9 | — | — | — |
| Montana | 3,204 | 24.3 | 28.9 | 23.0 | 21.4 | 26.6 | 28.1 | 19.8 | 23.7 | 26.6 | 23.5 | — | — | 43.3 | 21.9 |
| Nebraska | 8,285 | 28.0 | 29.2 | 32.1 | 26.1 | 28.8 | 33.2 | 23.4 | 28.3 | 26.9 | 27.6 | 49.9 | — | — | 25.4 |
| Nevada | 2,244 | 26.5 | 30.3 | 27.2 | 23.5 | 30.5 | 25.3 | 22.6 | 26.3 | 28.0 | 23.9 | 17.9 | 22.4 | — | 33.5 |
| New Hampshire | 3,460 | 24.5 | 27.2 | 26.7 | 22.6 | 27.2 | 29.3 | 20.7 | 24.6 | 24.8 | 24.6 | — | — | — | — |
| New Jersey | 5,706 | 23.4 | 25.8 | 27.2 | 21.4 | 28.8 | 26.5 | 18.4 | 23.5 | 22.8 | 23.3 | 34.1 | 8.4 | — | 24.3 |

^a Obesity is defined as having a body mass index ≥ 30 kg/m².
^b We restricted the prevalence estimates to the categories in which there were 50 or more respondents; blank cells indicate fewer than 50 respondents in this category. Confidence intervals are available from the authors on request.
^c The total number of employed respondents in the 2008 BRFSS data stratified by 50 states and Washington, DC (excluding respondents missing obesity data).

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Table 1. (continued) Prevalence of Obesity^a by State Among Workers Aged 18 to 64 Years, 2008 Behavioral Risk Factor Surveillance System (BRFSS)

| State | No. of Respondents ^c | Prevalence of Obesity ^b , % | | | | | | | | | | | | | |
|----------------------|---------------------------------|--|-----------------------------|---------------|-------------|------------------------------|--------------|------------------|-------------------------|-------------|----------------|------------------|---------------------------------|-------------------------------|-------------|
| | | Overall | Annual Household Income, \$ | | | Educational Attainment | | | Health Insurance Status | | Race/Ethnicity | | | | |
| | | | <35,000 | 35,000-74,999 | ≥75,000 | High School Graduate or Less | Some College | College Graduate | Any | None | White | African American | Asian/Hawaiian/Pacific Islander | American Indian/Alaska Native | Hispanic |
| New Mexico | 2,880 | 26.9 | 29.1 | 27.8 | 23.1 | 30.5 | 30.8 | 20.3 | 26.9 | 26.5 | 21.3 | — | — | 35.1 | 31.8 |
| New York | 3,634 | 25.3 | 26.8 | 29.6 | 22.8 | 28.6 | 30.3 | 20.6 | 25.2 | 26.8 | 24.1 | 34.2 | 7.4 | — | 30.2 |
| North Carolina | 7,070 | 30.8 | 34.0 | 32.5 | 27.9 | 34.2 | 35.2 | 23.9 | 29.5 | 36.4 | 29.1 | 41.4 | 5.7 | 37.6 | 26.7 |
| North Dakota | 2,643 | 28.8 | 30.6 | 30.6 | 26.7 | 32.3 | 28.9 | 25.8 | 28.9 | 25.8 | 28.6 | — | — | 47.6 | — |
| Ohio | 5,740 | 29.8 | 33.7 | 34.1 | 26.1 | 32.4 | 32.8 | 25.7 | 30.2 | 26.7 | 29.4 | 37.0 | 8.4 | — | 38.5 |
| Oklahoma | 3,317 | 32.3 | 32.2 | 34.8 | 30.8 | 31.6 | 35.7 | 30.5 | 33.1 | 29.0 | 31.2 | 41.0 | — | 39.3 | 33.0 |
| Oregon | 2,147 | 24.8 | 27.2 | 26.6 | 22.3 | 26.5 | 28.9 | 20.6 | 25.3 | 21.9 | 25.4 | — | — | — | 17.7 |
| Pennsylvania | 5,658 | 29.9 | 36.0 | 30.6 | 25.8 | 34.4 | 33.4 | 23.2 | 29.3 | 34.9 | 29.1 | 42.1 | 9.6 | — | 32.0 |
| Rhode Island | 2,237 | 22.9 | 29.5 | 23.5 | 21.4 | 27.3 | 24.2 | 19.4 | 22.8 | 23.8 | 21.6 | 30.3 | — | — | 27.8 |
| South Carolina | 4,217 | 30.9 | 39.0 | 31.7 | 24.9 | 35.3 | 33.4 | 24.7 | 29.9 | 36.2 | 26.6 | 43.4 | — | — | 34.0 |
| South Dakota | 3,491 | 29.1 | 34.4 | 30.3 | 24.4 | 32.6 | 30.7 | 24.7 | 28.9 | 30.8 | 28.5 | — | — | 41.1 | — |
| Tennessee | 1,896 | 32.3 | 33.9 | 34.5 | 25.6 | 39.1 | 33.3 | 23.4 | 32.5 | 31.4 | 29.9 | 38.4 | — | — | — |
| Texas | 4,525 | 29.1 | 30.1 | 33.1 | 27.2 | 30.0 | 35.1 | 24.4 | 29.8 | 27.3 | 28.2 | 37.7 | 3.7 | — | 31.7 |
| Utah | 2,838 | 24.0 | 28.2 | 24.6 | 23.3 | 25.9 | 23.1 | 23.0 | 24.0 | 24.4 | 24.4 | — | — | — | 20.8 |
| Vermont | 3,715 | 22.6 | 23.2 | 25.2 | 19.2 | 27.5 | 25.7 | 17.2 | 22.5 | 23.7 | 22.7 | — | — | — | — |
| Virginia | 2,389 | 26.1 | 24.3 | 26.8 | 25.4 | 30.4 | 27.9 | 23.0 | 26.9 | 18.5 | 27.3 | 33.7 | — | — | 17.7 |
| Washington | 10,222 | 26.1 | 26.6 | 28.4 | 24.7 | 29.7 | 30.2 | 20.8 | 26.4 | 23.8 | 26.5 | 28.3 | 15.0 | 36.8 | 25.5 |
| West Virginia | 1,729 | 34.6 | 34.5 | 35.7 | 32.5 | 37.1 | 36.5 | 29.4 | 34.6 | 34.8 | 34.4 | — | — | — | — |
| Wisconsin | 3,700 | 27.2 | 32.6 | 28.2 | 21.7 | 29.3 | 30.4 | 22.8 | 26.7 | 31.0 | 26.1 | 42.0 | — | 43.1 | 29.0 |
| Wyoming | 4,159 | 26.3 | 26.6 | 27.7 | 26.3 | 27.7 | 28.5 | 22.6 | 27.3 | 21.7 | 25.9 | — | — | 43.1 | 25.9 |
| United States | 189,055 | 27.0 | 30.2 | 29.3 | 24.1 | 30.5 | 30.5 | 21.9 | 26.9 | 27.6 | 26.1 | 37.3 | 9.1 | 32.5 | 29.3 |

^a Obesity is defined as having a body mass index ≥ 30 kg/m².

^b We restricted the prevalence estimates to the categories in which there were 50 or more respondents; blank cells indicate fewer than 50 respondents in this category. Confidence intervals are available from the authors on request.

^c The total number of employed respondents in the 2008 BRFSS data stratified by 50 states and Washington, DC (excluding respondents missing obesity data).

Table 2. Prevalence of Physical Inactivity^a by State Among Workers Aged 18 to 64 Years, 2007 Behavioral Risk Factor Surveillance System (BRFSS)

| State | No. of Respondents ^c | Prevalence of Physical Inactivity ^b , % | | | | | | | | | | | | | |
|----------------------|---------------------------------|--|-----------------------------|---------------|---------|------------------------------|--------------|------------------|-------------------------|------|----------------|------------------|---------------------------------|-------------------------------|----------|
| | | Overall | Annual Household Income, \$ | | | Educational Attainment | | | Health Insurance Status | | Race/Ethnicity | | | | |
| | | | <35,000 | 35,000-74,999 | ≥75,000 | High School Graduate or Less | Some College | College Graduate | Any | None | White | African American | Asian/Hawaiian/Pacific Islander | American Indian/Alaska Native | Hispanic |
| Alabama | 2,843 | 54.4 | 59.3 | 53.5 | 49.1 | 55.8 | 56.3 | 50.8 | 53.9 | 57.4 | 53.1 | 59.5 | — | — | — |
| Alaska | 1,475 | 37.2 | 43.1 | 38.1 | 31.6 | 36.1 | 38.7 | 37.0 | 36.2 | 43.2 | 36.4 | — | — | 47.3 | — |
| Arizona | 1,891 | 45.0 | 56.1 | 46.9 | 36.3 | 54.5 | 42.4 | 38.9 | 44.0 | 49.4 | 41.5 | — | — | 32.0 | 55.7 |
| Arkansas | 2,348 | 51.5 | 51.0 | 53.2 | 49.4 | 52.7 | 52.0 | 49.7 | 51.6 | 52.2 | 50.7 | 56.8 | — | — | 57.3 |
| California | 2,711 | 51.0 | 57.9 | 53.5 | 43.8 | 55.3 | 52.8 | 46.1 | 51.0 | 50.9 | 42.5 | 55.4 | 70.2 | — | 56.1 |
| Colorado | 6,245 | 43.8 | 51.5 | 45.4 | 37.0 | 50.2 | 45.6 | 38.5 | 42.4 | 50.6 | 41.4 | 52.8 | 40.4 | — | 52.4 |
| Connecticut | 3,537 | 45.9 | 55.4 | 43.8 | 44.6 | 47.2 | 46.0 | 45.2 | 45.6 | 48.7 | 43.9 | 55.6 | 68.9 | — | 53.7 |
| Delaware | 1,989 | 49.2 | 55.5 | 48.4 | 48.5 | 52.4 | 44.2 | 50.0 | 49.6 | 45.2 | 47.3 | 55.7 | — | — | 62.0 |
| District of Columbia | 2,005 | 41.3 | 54.7 | 44.8 | 35.9 | 58.4 | 42.0 | 36.7 | 41.0 | 45.6 | 31.6 | 47.6 | 45.1 | — | 57.5 |
| Florida | 16,435 | 50.8 | 56.3 | 50.4 | 46.7 | 56.1 | 49.0 | 47.7 | 49.8 | 55.0 | 48.5 | 53.7 | 46.1 | 47.2 | 58.4 |
| Georgia | 3,394 | 49.6 | 49.9 | 49.7 | 50.9 | 50.6 | 48.6 | 49.8 | 50.1 | 46.6 | 48.7 | 55.1 | — | — | 37.1 |
| Hawaii | 3,681 | 48.7 | 57.6 | 48.5 | 45.1 | 51.5 | 51.0 | 44.5 | 48.9 | 46.0 | 39.9 | — | 58.0 | — | 51.9 |
| Idaho | 2,566 | 43.2 | 49.2 | 42.2 | 39.3 | 45.3 | 42.8 | 40.9 | 42.4 | 46.1 | 42.8 | — | — | — | 50.9 |
| Illinois | 2,586 | 49.2 | 54.4 | 52.4 | 43.0 | 53.4 | 49.3 | 46.6 | 48.7 | 52.9 | 45.8 | 52.9 | 62.2 | — | 58.2 |
| Indiana | 2,809 | 48.8 | 52.9 | 50.1 | 43.2 | 51.6 | 48.4 | 46.0 | 49.3 | 46.5 | 48.6 | 45.4 | — | — | 53.7 |
| Iowa | 2,822 | 49.5 | 49.6 | 51.6 | 44.8 | 50.1 | 48.2 | 50.0 | 50.6 | 42.2 | 49.2 | — | — | — | 60.6 |
| Kansas | 4,384 | 48.7 | 54.4 | 48.6 | 44.6 | 52.9 | 46.1 | 47.5 | 48.4 | 52.5 | 48.3 | 48.7 | — | — | 55.4 |
| Kentucky | 2,398 | 50.0 | 51.3 | 52.4 | 44.5 | 50.9 | 49.9 | 48.6 | 50.3 | 48.3 | 51.1 | 41.3 | — | — | — |
| Louisiana | 3,013 | 58.4 | 62.9 | 59.1 | 55.3 | 61.0 | 60.5 | 54.4 | 57.4 | 62.1 | 58.9 | 55.3 | — | — | 71.1 |
| Maine | 3,391 | 41.1 | 44.5 | 41.7 | 38.6 | 41.2 | 44.6 | 38.6 | 42.8 | 30.9 | 40.9 | — | — | — | — |
| Maryland | 4,315 | 50.3 | 59.7 | 51.8 | 46.8 | 53.6 | 54.0 | 46.9 | 50.0 | 52.3 | 46.6 | 55.7 | 55.0 | — | 62.9 |
| Massachusetts | 9,867 | 46.3 | 55.8 | 47.1 | 43.7 | 52.4 | 46.8 | 43.5 | 45.9 | 52.1 | 44.0 | 54.0 | 61.2 | — | 56.4 |
| Michigan | 3,290 | 47.5 | 48.2 | 49.9 | 45.0 | 46.9 | 49.2 | 46.7 | 48.3 | 41.8 | 46.8 | 53.4 | — | — | 28.1 |
| Minnesota | 2,615 | 49.1 | 54.9 | 49.0 | 45.9 | 55.9 | 49.6 | 44.7 | 48.4 | 55.9 | 48.4 | 55.1 | — | — | — |
| Mississippi | 3,296 | 57.3 | 57.6 | 58.7 | 52.8 | 57.3 | 60.1 | 54.8 | 56.4 | 60.9 | 55.5 | 61.3 | — | — | 51.5 |
| Missouri | 2,448 | 50.3 | 47.7 | 47.6 | 51.6 | 48.6 | 53.0 | 49.8 | 51.3 | 43.5 | 48.8 | 64.7 | — | — | — |
| Montana | 2,895 | 39.5 | 42.5 | 39.8 | 34.8 | 38.2 | 42.2 | 38.6 | 38.1 | 45.3 | 39.4 | — | — | 48.4 | 29.9 |
| Nebraska | 5,540 | 46.2 | 52.0 | 45.2 | 41.7 | 50.9 | 41.3 | 46.0 | 46.0 | 47.6 | 45.7 | — | — | — | 51.4 |
| Nevada | 2,040 | 47.6 | 51.1 | 48.0 | 44.2 | 51.2 | 45.4 | 45.6 | 47.2 | 49.2 | 46.3 | — | — | — | 52.8 |
| New Hampshire | 2,982 | 45.1 | 47.4 | 48.8 | 41.7 | 49.3 | 43.6 | 43.2 | 45.5 | 41.9 | 44.8 | — | — | — | 44.7 |
| New Jersey | 3,153 | 49.8 | 58.7 | 50.6 | 46.2 | 53.9 | 51.5 | 46.7 | 48.0 | 61.8 | 45.0 | 54.8 | 69.9 | — | 57.3 |
| New Mexico | 3,093 | 44.4 | 50.3 | 39.4 | 40.5 | 51.5 | 41.3 | 39.4 | 42.7 | 49.9 | 40.6 | — | — | 44.2 | 47.7 |
| New York | 3,107 | 48.0 | 51.3 | 49.3 | 44.8 | 51.9 | 45.6 | 46.6 | 47.4 | 52.0 | 44.1 | 51.6 | 61.3 | — | 59.2 |

^a Physical inactivity is defined as not meeting the Centers for Disease Control and Prevention physical activity guideline of at least 5 days per week for 30 minutes a day of moderate-intensity activity or at least 3 days per week for 20 minutes a day of vigorous-intensity activity.

^b We restricted the prevalence estimates to the categories in which there were 50 or more respondents; blank cells indicate fewer than 50 respondents in this category. Confidence intervals are available from the authors on request.

^c The total number of employed respondents in the 2007 BRFSS data stratified by 50 states and Washington, DC (excluding respondents missing physical inactivity data).

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Table 2. (continued) Prevalence of Physical Inactivity^a by State Among Workers Aged 18 to 64 Years, 2007 Behavioral Risk Factor Surveillance System (BRFSS)

| State | No. of Respondents ^c | Prevalence of Physical Inactivity ^b , % | | | | | | | | | | | | | |
|----------------------|---------------------------------|--|-----------------------------|---------------|-------------|------------------------------|--------------|------------------|-------------------------|-------------|----------------|------------------|---------------------------------|-------------------------------|-------------|
| | | Overall | Annual Household Income, \$ | | | Educational Attainment | | | Health Insurance Status | | Race/Ethnicity | | | | |
| | | | <35,000 | 35,000-74,999 | ≥75,000 | High School Graduate or Less | Some College | College Graduate | Any | None | White | African American | Asian/Hawaiian/Pacific Islander | American Indian/Alaska Native | Hispanic |
| North Carolina | 6,560 | 53.5 | 58.2 | 53.8 | 47.9 | 59.7 | 52.2 | 48.4 | 53.0 | 56.2 | 50.7 | 58.1 | 54.2 | 50.4 | 70.3 |
| North Dakota | 2,579 | 45.6 | 45.2 | 46.0 | 42.1 | 47.4 | 45.4 | 44.2 | 45.4 | 45.1 | 45.9 | — | — | 46.4 | — |
| Ohio | 5,013 | 48.1 | 51.3 | 48.0 | 45.7 | 48.3 | 49.8 | 46.7 | 48.2 | 46.5 | 47.5 | 52.4 | — | — | 69.0 |
| Oklahoma | 3,091 | 52.0 | 55.0 | 52.3 | 47.6 | 54.4 | 53.8 | 47.7 | 52.2 | 51.1 | 51.3 | 44.2 | — | 54.5 | 57.0 |
| Oregon | 2,237 | 43.0 | 47.1 | 44.4 | 38.0 | 47.8 | 43.7 | 39.0 | 42.4 | 45.5 | 42.3 | — | — | — | 52.0 |
| Pennsylvania | 5,735 | 45.7 | 47.6 | 47.4 | 43.0 | 48.7 | 46.1 | 42.9 | 46.3 | 40.0 | 46.6 | 48.1 | 40.1 | — | 39.7 |
| Rhode Island | 2,098 | 47.1 | 55.5 | 49.3 | 43.2 | 52.5 | 49.3 | 42.2 | 47.4 | 45.4 | 45.8 | 50.5 | — | — | 58.5 |
| South Carolina | 4,586 | 51.0 | 55.6 | 49.5 | 48.6 | 53.0 | 51.2 | 48.7 | 50.3 | 54.3 | 49.7 | 56.8 | — | — | 41.2 |
| South Dakota | 3,498 | 49.8 | 54.6 | 52.0 | 41.6 | 56.8 | 49.1 | 43.9 | 49.7 | 50.8 | 49.6 | — | — | 54.1 | — |
| Tennessee | 2,030 | 57.9 | 68.7 | 55.5 | 47.2 | 60.8 | 58.4 | 53.2 | 56.8 | 65.7 | 58.5 | 60.6 | — | — | — |
| Texas | 7,287 | 52.0 | 55.6 | 52.4 | 48.2 | 54.0 | 52.2 | 49.6 | 52.1 | 52.0 | 49.0 | 53.8 | 66.8 | 43.0 | 54.7 |
| Utah | 2,733 | 43.7 | 50.2 | 43.2 | 37.8 | 49.6 | 42.2 | 38.9 | 43.5 | 44.3 | 42.3 | — | — | — | 49.2 |
| Vermont | 3,724 | 40.3 | 45.3 | 40.4 | 37.9 | 46.9 | 42.9 | 34.1 | 41.3 | 33.9 | 40.0 | — | — | — | 55.7 |
| Virginia | 2,893 | 49.3 | 54.5 | 46.7 | 47.2 | 51.9 | 50.4 | 47.5 | 48.8 | 53.7 | 47.9 | 51.2 | 62.4 | — | 58.7 |
| Washington | 11,957 | 45.4 | 49.9 | 45.8 | 43.1 | 46.9 | 45.7 | 44.1 | 45.1 | 47.8 | 44.4 | 32.3 | 50.8 | 43.3 | 58.7 |
| West Virginia | 1,888 | 50.4 | 49.3 | 51.6 | 49.7 | 48.8 | 50.3 | 53.2 | 52.1 | 42.1 | 50.7 | — | — | — | — |
| Wisconsin | 3,867 | 42.7 | 46.1 | 43.8 | 39.1 | 41.7 | 46.5 | 40.4 | 42.7 | 42.5 | 42.8 | 44.9 | — | — | 31.2 |
| Wyoming | 3,229 | 41.5 | 44.7 | 41.3 | 39.0 | 42.9 | 43.7 | 37.5 | 41.9 | 40.6 | 40.9 | — | — | — | 49.0 |
| United States | 196,169 | 49.2 | 54.3 | 49.8 | 45.0 | 52.5 | 49.5 | 46.3 | 48.9 | 51.0 | 46.8 | 54.3 | 63.1 | 44.3 | 55.6 |

^a Physical inactivity is defined as not meeting the Centers for Disease Control and Prevention physical activity guideline of at least 5 days per week for 30 minutes a day of moderate-intensity activity or at least 3 days per week for 20 minutes a day of vigorous-intensity activity.

^b We restricted the prevalence estimates to the categories in which there were 50 or more respondents; blank cells indicate fewer than 50 respondents in this category. Confidence intervals are available from the authors on request.

^c The total number of employed respondents in the 2007 BRFSS data stratified by 50 states and Washington, DC (excluding respondents missing physical inactivity data).

Table 3. Prevalence of Smoking^a by State Among Workers Aged 18 to 64 Years, 2008 Behavioral Risk Factor Surveillance System (BRFSS)

| State | No. of Respondents ^c | Prevalence of Smoking ^b , % | | | | | | | | | | | | | |
|----------------------|---------------------------------|--|-----------------------------|---------------|---------|------------------------------|--------------|------------------|-------------------------|------|----------------|------------------|---------------------------------|-------------------------------|----------|
| | | Overall | Annual Household Income, \$ | | | Educational Attainment | | | Health Insurance Status | | Race/Ethnicity | | | | |
| | | | <35,000 | 35,000-74,999 | ≥75,000 | High School Graduate or Less | Some College | College Graduate | Any | None | White | African American | Asian/Hawaiian/Pacific Islander | American Indian/Alaska Native | Hispanic |
| Alabama | 2,659 | 22.9 | 29.7 | 22.3 | 13.5 | 32.9 | 20.1 | 13.6 | 20.1 | 38.7 | 23.3 | 22.6 | — | — | — |
| Alaska | 1,658 | 20.1 | 32.8 | 17.2 | 14.4 | 33.8 | 16.9 | 7.9 | 17.8 | 30.5 | 16.7 | — | — | 35.1 | 15.0 |
| Arizona | 2,330 | 17.4 | 25.8 | 20.4 | 9.7 | 28.1 | 18.8 | 6.4 | 14.8 | 29.6 | 17.8 | — | — | 10.9 | 18.0 |
| Arkansas | 2,474 | 23.0 | 36.9 | 21.6 | 11.4 | 34.0 | 24.3 | 8.7 | 19.4 | 38.9 | 22.0 | 26.1 | — | — | 29.5 |
| California | 5,391 | 14.9 | 20.6 | 15.9 | 9.7 | 19.3 | 20.5 | 6.9 | 13.4 | 21.2 | 15.3 | 22.4 | 6.9 | — | 14.9 |
| Colorado | 6,157 | 17.9 | 28.3 | 21.8 | 10.2 | 29.6 | 21.6 | 7.6 | 15.7 | 29.5 | 16.5 | 21.4 | 12.9 | — | 21.7 |
| Connecticut | 3,006 | 17.5 | 29.3 | 22.0 | 12.2 | 28.8 | 23.3 | 9.6 | 16.2 | 31.1 | 17.4 | 16.5 | 12.0 | — | 20.0 |
| Delaware | 2,015 | 19.4 | 35.6 | 23.3 | 11.9 | 35.0 | 19.5 | 9.4 | 18.4 | 32.0 | 19.9 | 17.3 | — | — | 17.9 |
| District of Columbia | 2,241 | 14.6 | 24.5 | 19.7 | 8.5 | 27.5 | 22.2 | 9.0 | 13.3 | 28.6 | 10.3 | 20.7 | — | — | 11.7 |
| Florida | 4,515 | 19.3 | 29.2 | 18.3 | 11.7 | 25.5 | 23.6 | 11.1 | 16.3 | 32.9 | 22.2 | 9.8 | — | — | 17.1 |
| Georgia | 2,719 | 19.4 | 27.3 | 21.1 | 15.0 | 31.3 | 20.3 | 10.5 | 16.9 | 34.1 | 20.5 | 15.4 | — | — | 16.1 |
| Hawaii | 3,506 | 17.1 | 28.2 | 19.2 | 11.8 | 27.1 | 16.5 | 9.9 | 16.2 | 29.9 | 15.4 | — | 13.5 | — | 16.4 |
| Idaho | 2,513 | 18.1 | 28.5 | 16.7 | 8.8 | 30.3 | 16.1 | 6.9 | 14.7 | 32.2 | 18.0 | — | — | — | 17.8 |
| Illinois | 2,581 | 21.4 | 33.0 | 22.6 | 15.4 | 34.8 | 23.7 | 10.3 | 19.3 | 34.0 | 21.2 | 22.5 | 11.9 | — | 24.2 |
| Indiana | 2,380 | 27.6 | 45.6 | 26.6 | 17.4 | 41.1 | 30.1 | 10.7 | 22.7 | 54.9 | 25.5 | 32.5 | — | — | 52.7 |
| Iowa | 3,244 | 20.9 | 37.9 | 20.4 | 11.5 | 35.2 | 20.3 | 7.4 | 18.2 | 47.6 | 20.4 | — | — | — | 24.4 |
| Kansas | 4,499 | 19.1 | 31.5 | 19.5 | 10.8 | 32.6 | 20.9 | 8.2 | 16.6 | 37.8 | 18.4 | 22.3 | — | — | 22.0 |
| Kentucky | 3,325 | 24.7 | 41.5 | 24.8 | 14.5 | 37.3 | 28.3 | 9.5 | 21.0 | 48.2 | 24.7 | 28.9 | — | — | — |
| Louisiana | 2,889 | 20.2 | 26.4 | 23.0 | 14.7 | 26.3 | 25.3 | 11.1 | 16.7 | 35.5 | 22.2 | 16.8 | — | — | 23.9 |
| Maine | 3,367 | 18.7 | 33.4 | 18.2 | 9.8 | 29.0 | 22.0 | 8.5 | 17.1 | 29.8 | 18.6 | — | — | — | — |
| Maryland | 4,941 | 14.9 | 23.9 | 19.5 | 10.0 | 25.2 | 19.6 | 7.3 | 13.3 | 27.0 | 16.4 | 15.1 | 4.3 | — | 8.9 |
| Massachusetts | 10,643 | 15.7 | 24.7 | 17.9 | 11.8 | 27.7 | 20.1 | 7.6 | 15.1 | 29.0 | 16.3 | 17.4 | 6.2 | — | 11.0 |
| Michigan | 4,091 | 20.1 | 32.8 | 20.1 | 13.0 | 33.6 | 20.1 | 10.2 | 18.1 | 37.2 | 19.4 | 18.5 | — | — | 33.2 |
| Minnesota | 2,355 | 18.1 | 31.8 | 20.4 | 9.2 | 30.2 | 21.5 | 9.6 | 16.2 | 39.9 | 17.5 | 21.5 | — | — | — |
| Mississippi | 3,259 | 22.0 | 28.0 | 21.9 | 13.4 | 29.6 | 23.1 | 11.8 | 18.9 | 35.4 | 23.6 | 19.1 | — | — | 24.1 |
| Missouri | 2,382 | 25.5 | 42.9 | 24.6 | 15.3 | 38.6 | 24.4 | 12.9 | 21.9 | 47.0 | 25.8 | 18.9 | — | — | — |
| Montana | 3,308 | 19.5 | 34.2 | 16.2 | 9.4 | 31.1 | 21.8 | 8.2 | 15.4 | 36.6 | 18.4 | — | — | 37.3 | 23.6 |
| Nebraska | 8,558 | 20.1 | 32.7 | 21.5 | 10.6 | 33.3 | 20.6 | 9.7 | 17.2 | 39.5 | 20.2 | 19.6 | — | — | 21.2 |
| Nevada | 2,339 | 22.1 | 32.7 | 22.6 | 16.8 | 26.5 | 26.5 | 12.5 | 20.4 | 29.4 | 21.7 | 16.4 | 21.2 | — | 22.6 |
| New Hampshire | 3,610 | 18.3 | 32.0 | 23.2 | 11.1 | 31.8 | 22.8 | 8.7 | 15.7 | 41.1 | 18.4 | — | 1.5 | — | — |
| New Jersey | 6,002 | 16.1 | 21.2 | 20.9 | 11.4 | 25.1 | 20.1 | 8.5 | 15.3 | 21.6 | 17.4 | 17.7 | 9.8 | — | 12.7 |
| New Mexico | 2,987 | 20.5 | 29.5 | 17.6 | 14.2 | 28.6 | 22.8 | 10.4 | 17.5 | 32.3 | 21.0 | — | — | 11.7 | 21.9 |
| New York | 3,796 | 17.7 | 24.5 | 22.7 | 10.5 | 28.5 | 21.3 | 8.8 | 15.9 | 30.8 | 18.7 | 20.1 | 14.1 | — | 14.1 |

^a Tobacco use is defined as ever having smoked at least 100 cigarettes and currently smoking every day or some days.

^b We restricted the prevalence estimates to the categories in which there were 50 or more respondents; blank cells indicate fewer than 50 respondents in this category. Confidence intervals are available from the authors on request.

^c The total number of employed respondents in the 2008 BRFSS data stratified by 50 states and Washington, DC (excluding respondents missing smoking data).

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Table 3. (continued) Prevalence of Smoking^a by State Among Workers Aged 18 to 64 Years, 2008 Behavioral Risk Factor Surveillance System (BRFSS)

| State | No. of Respondents ^c | Prevalence of Smoking ^b , % | | | | | | | | | | | | | |
|----------------------|---------------------------------|--|-----------------------------|---------------|-------------|------------------------------|--------------|------------------|-------------------------|-------------|----------------|------------------|---------------------------------|-------------------------------|-------------|
| | | Overall | Annual Household Income, \$ | | | Educational Attainment | | | Health Insurance Status | | Race/Ethnicity | | | | |
| | | | <35,000 | 35,000-74,999 | ≥75,000 | High School Graduate or Less | Some College | College Graduate | Any | None | White | African American | Asian/Hawaiian/Pacific Islander | American Indian/Alaska Native | Hispanic |
| North Carolina | 7,331 | 22.0 | 32.4 | 21.2 | 13.8 | 33.5 | 21.3 | 10.1 | 19.5 | 33.9 | 22.8 | 21.0 | 22.0 | 40.3 | 16.3 |
| North Dakota | 2,765 | 20.4 | 31.5 | 19.8 | 14.3 | 29.0 | 25.0 | 8.8 | 17.9 | 39.7 | 19.2 | — | — | 53.1 | — |
| Ohio | 5,991 | 20.9 | 38.1 | 22.0 | 9.9 | 35.7 | 22.3 | 7.0 | 17.7 | 45.3 | 20.0 | 22.7 | 8.9 | — | 41.0 |
| Oklahoma | 3,398 | 25.0 | 37.3 | 25.1 | 12.8 | 34.5 | 28.2 | 10.8 | 21.9 | 38.0 | 23.7 | 28.1 | — | 31.2 | 24.4 |
| Oregon | 2,218 | 16.3 | 23.4 | 17.1 | 9.3 | 29.0 | 16.3 | 6.0 | 13.6 | 30.6 | 16.1 | — | — | — | 11.6 |
| Pennsylvania | 5,892 | 22.8 | 37.9 | 24.9 | 13.6 | 32.8 | 25.3 | 10.9 | 21.3 | 34.0 | 22.4 | 22.6 | 22.5 | — | 24.5 |
| Rhode Island | 2,317 | 18.0 | 25.5 | 24.3 | 11.4 | 28.7 | 23.8 | 8.1 | 16.2 | 31.2 | 18.6 | 19.7 | — | — | 11.3 |
| South Carolina | 4,388 | 19.9 | 28.7 | 19.8 | 14.7 | 29.9 | 19.6 | 10.7 | 16.7 | 36.2 | 21.5 | 15.9 | — | — | 16.6 |
| South Dakota | 3,627 | 18.7 | 28.2 | 17.1 | 13.6 | 27.8 | 20.0 | 9.9 | 16.7 | 33.7 | 18.0 | — | — | 37.0 | — |
| Tennessee | 1,990 | 20.7 | 34.1 | 17.3 | 11.8 | 31.6 | 18.5 | 9.9 | 18.1 | 35.6 | 22.8 | 17.3 | — | — | — |
| Texas | 4,767 | 20.1 | 26.1 | 21.4 | 12.6 | 28.9 | 21.3 | 10.6 | 16.7 | 30.5 | 20.4 | 19.4 | 11.9 | — | 20.6 |
| Utah | 2,912 | 9.8 | 15.3 | 13.1 | 4.4 | 17.6 | 8.1 | 3.4 | 9.0 | 13.8 | 9.5 | — | — | — | 14.6 |
| Vermont | 3,829 | 16.8 | 32.7 | 15.4 | 7.7 | 29.2 | 16.1 | 8.1 | 14.6 | 32.6 | 16.6 | — | — | — | — |
| Virginia | 2,484 | 16.2 | 31.9 | 18.7 | 9.8 | 26.0 | 20.7 | 8.6 | 13.6 | 39.7 | 16.6 | 18.1 | 10.0 | — | 15.3 |
| Washington | 10,576 | 15.7 | 26.1 | 18.7 | 8.8 | 28.3 | 17.4 | 6.2 | 13.6 | 29.9 | 15.6 | 20.8 | 7.1 | 31.7 | 16.1 |
| West Virginia | 1,794 | 26.7 | 40.1 | 25.4 | 14.1 | 37.9 | 24.2 | 13.0 | 22.4 | 47.6 | 26.3 | — | — | — | — |
| Wisconsin | 3,843 | 21.5 | 31.0 | 20.4 | 16.8 | 32.1 | 22.6 | 10.9 | 19.1 | 43.5 | 20.7 | 28.7 | — | 38.1 | 37.5 |
| Wyoming | 4,295 | 21.6 | 39.3 | 22.4 | 12.4 | 33.1 | 23.9 | 7.0 | 17.9 | 38.9 | 20.6 | — | — | 35.7 | 29.5 |
| United States | 196,157 | 19.2 | 28.9 | 20.6 | 11.9 | 29.3 | 21.6 | 9.2 | 16.8 | 32.5 | 19.7 | 18.7 | 10.8 | 27.8 | 17.9 |

^a Tobacco use is defined as ever having smoked at least 100 cigarettes and currently smoking every day or some days.

^b We restricted the prevalence estimates to the categories in which there were 50 or more respondents; blank cells indicate fewer than 50 respondents in this category. Confidence intervals are available from the authors on request.

^c The total number of employed respondents in the 2008 BRFSS data stratified by 50 states and Washington, DC (excluding respondents missing smoking data).

Table 4. Prevalence of No Influenza Vaccination by State Among Workers Aged 50 to 64 Years, 2008 Behavioral Risk Factor Surveillance System (BRFSS)

| State | No. of Respondents ^b | Prevalence of No Influenza Vaccination ^a , % | | | | | | | | | | | | | |
|----------------------|---------------------------------|---|-----------------------------|---------------|---------|------------------------------|--------------|------------------|-------------------------|------|----------------|------------------|---------------------------------|-------------------------------|----------|
| | | Overall | Annual Household Income, \$ | | | Educational Attainment | | | Health Insurance Status | | Race/Ethnicity | | | | |
| | | | <35,000 | 35,000-74,999 | ≥75,000 | High School Graduate or Less | Some College | College Graduate | Any | None | White | African American | Asian/Hawaiian/Pacific Islander | American Indian/Alaska Native | Hispanic |
| Alabama | 1,047 | 59.9 | 74.5 | 57.1 | 50.6 | 67.6 | 62.2 | 49.7 | 58.5 | 73.3 | 56.3 | 71.2 | — | — | — |
| Alaska | 614 | 58.2 | 64.6 | 61.3 | 51.2 | 64.8 | 58.5 | 53.2 | 55.7 | 73.6 | 59.6 | — | — | 46.4 | — |
| Arizona | 991 | 65.0 | 59.5 | 66.0 | 64.5 | 64.3 | 69.3 | 62.2 | 65.2 | 63.5 | 65.4 | — | — | — | 74.3 |
| Arkansas | 1,052 | 56.2 | 57.2 | 56.6 | 53.5 | 61.2 | 54.3 | 51.8 | 53.9 | 72.6 | 55.6 | 67.9 | — | — | — |
| California | 2,056 | 63.4 | 73.9 | 65.7 | 57.7 | 71.6 | 63.5 | 58.4 | 60.3 | 87.7 | 58.5 | 70.2 | 68.3 | — | 70.6 |
| Colorado | 2,474 | 53.3 | 64.6 | 54.6 | 49.8 | 61.1 | 55.9 | 48.2 | 50.9 | 75.9 | 52.5 | — | — | — | 57.4 |
| Connecticut | 1,254 | 54.1 | 63.6 | 54.1 | 51.5 | 56.3 | 56.0 | 52.4 | 52.9 | 75.7 | 52.5 | 61.9 | — | — | 70.0 |
| Delaware | 769 | 53.2 | 66.0 | 50.2 | 49.9 | 67.0 | 49.6 | 47.4 | 52.2 | 78.4 | 52.0 | 59.2 | — | — | — |
| District of Columbia | 866 | 55.5 | 63.7 | 58.8 | 50.6 | 58.7 | 61.4 | 53.0 | 54.5 | 68.4 | 44.7 | 65.0 | — | — | — |
| Florida | 1,911 | 70.2 | 77.7 | 71.1 | 64.0 | 78.6 | 74.4 | 62.3 | 67.9 | 86.2 | 66.2 | 74.4 | — | — | 83.9 |
| Georgia | 1,045 | 62.2 | 66.5 | 64.1 | 58.4 | 64.5 | 65.5 | 58.3 | 60.7 | 73.0 | 60.0 | 66.4 | — | — | — |
| Hawaii | 1,480 | 53.9 | 58.4 | 53.8 | 52.0 | 59.2 | 56.8 | 49.9 | 52.6 | 87.5 | 58.6 | — | 45.9 | — | 50.9 |
| Idaho | 1,022 | 63.8 | 72.3 | 68.4 | 52.8 | 75.8 | 63.5 | 53.9 | 60.3 | 86.7 | 63.5 | — | — | — | — |
| Illinois | 1,000 | 63.7 | 78.8 | 65.1 | 57.8 | 69.4 | 64.9 | 59.1 | 63.0 | 73.3 | 62.8 | 69.5 | — | — | — |
| Indiana | 986 | 62.6 | 75.3 | 61.3 | 57.6 | 66.5 | 61.2 | 60.0 | 60.5 | 90.2 | 61.7 | 65.2 | — | — | — |
| Iowa | 1,315 | 52.3 | 64.2 | 51.3 | 47.6 | 59.0 | 51.4 | 44.9 | 51.7 | 59.5 | 52.0 | — | — | — | — |
| Kansas | 1,984 | 57.0 | 64.7 | 57.6 | 53.0 | 65.9 | 59.4 | 50.1 | 55.3 | 81.8 | 56.6 | 50.5 | — | — | 62.3 |
| Kentucky | 1,362 | 56.4 | 69.4 | 57.5 | 49.0 | 66.4 | 57.6 | 46.0 | 54.1 | 78.1 | 56.6 | — | — | — | — |
| Louisiana | 1,099 | 56.4 | 65.5 | 53.2 | 52.5 | 57.7 | 61.4 | 52.1 | 53.7 | 72.5 | 55.4 | 62.3 | — | — | — |
| Maine | 1,535 | 55.2 | 64.7 | 57.4 | 49.3 | 61.7 | 52.0 | 53.1 | 52.8 | 76.3 | 55.2 | — | — | — | — |
| Maryland | 1,991 | 54.6 | 61.7 | 59.3 | 51.6 | 67.7 | 53.4 | 49.1 | 53.7 | 68.2 | 51.3 | 61.9 | — | — | — |
| Massachusetts | 4,210 | 55.4 | 66.5 | 57.2 | 51.5 | 60.8 | 60.5 | 50.9 | 55.0 | 66.3 | 55.1 | 65.9 | — | — | 51.5 |
| Michigan | 1,735 | 60.9 | 72.1 | 61.5 | 56.1 | 68.9 | 64.1 | 53.6 | 59.6 | 75.5 | 59.5 | 69.8 | — | — | — |
| Minnesota | 995 | 50.4 | 64.5 | 51.3 | 44.4 | 57.6 | 51.7 | 45.4 | 48.4 | 88.0 | 50.0 | — | — | — | — |
| Mississippi | 1,360 | 63.2 | 71.6 | 63.1 | 55.8 | 68.5 | 62.0 | 58.1 | 60.2 | 80.5 | 59.4 | 70.6 | — | — | — |
| Missouri | 1,012 | 55.8 | 67.0 | 56.6 | 50.7 | 67.0 | 56.0 | 46.4 | 53.9 | 76.9 | 54.2 | 73.6 | — | — | — |
| Montana | 1,550 | 61.5 | 71.0 | 62.3 | 52.0 | 71.9 | 60.2 | 55.3 | 58.4 | 78.6 | 61.3 | — | — | 60.7 | — |
| Nebraska | 3,794 | 49.7 | 59.3 | 52.5 | 43.3 | 57.7 | 50.4 | 42.4 | 47.9 | 69.0 | 50.0 | — | — | — | 58.5 |
| Nevada | 922 | 71.4 | 83.3 | 74.7 | 65.7 | 82.0 | 70.7 | 64.2 | 69.3 | 87.8 | 67.4 | — | — | — | 84.3 |
| New Hampshire | 1,571 | 52.8 | 57.8 | 56.4 | 50.4 | 62.9 | 55.3 | 47.0 | 51.2 | 72.0 | 52.6 | — | — | — | — |
| New Jersey | 2,396 | 60.7 | 66.8 | 66.0 | 56.7 | 67.1 | 61.7 | 56.3 | 59.4 | 74.2 | 60.2 | 64.7 | — | — | 62.3 |
| New Mexico | 1,265 | 62.0 | 68.5 | 60.4 | 57.9 | 70.2 | 59.5 | 58.4 | 59.4 | 77.4 | 60.6 | — | — | 49.8 | 65.9 |
| New York | 1,614 | 58.1 | 69.1 | 59.5 | 54.2 | 65.9 | 61.1 | 51.7 | 55.5 | 83.3 | 56.4 | 70.9 | — | — | 59.9 |

^a We restricted the prevalence estimates to the categories in which there were 50 or more respondents; blank cells indicate fewer than 50 respondents in this category. Confidence intervals are available from the authors on request.

^b The total number of employed respondents in the 2008 BRFSS data stratified by 50 states and Washington, DC (excluding respondents missing influenza vaccination data).

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Table 4. (continued) Prevalence of No Influenza Vaccination by State Among Workers Aged 50 to 64 Years, 2008 Behavioral Risk Factor Surveillance System (BRFSS)

| State | No. of Respondents ^b | Prevalence of No Influenza Vaccination ^a , % | | | | | | | | | | | | | |
|----------------------|---------------------------------|---|-----------------------------|---------------|-------------|------------------------------|--------------|------------------|-------------------------|-------------|----------------|------------------|---------------------------------|-------------------------------|-------------|
| | | Overall | Annual Household Income, \$ | | | Educational Attainment | | | Health Insurance Status | | Race/Ethnicity | | | | |
| | | | <35,000 | 35,000-74,999 | ≥75,000 | High School Graduate or Less | Some College | College Graduate | Any | None | White | African American | Asian/Hawaiian/Pacific Islander | American Indian/Alaska Native | Hispanic |
| North Carolina | 2,906 | 55.0 | 65.3 | 55.7 | 48.6 | 60.5 | 55.0 | 49.6 | 52.6 | 74.5 | 52.9 | 61.0 | — | 69.9 | 60.4 |
| North Dakota | 1,202 | 56.0 | 55.7 | 58.0 | 54.8 | 62.2 | 55.5 | 51.3 | 54.7 | 69.2 | 55.7 | — | — | — | — |
| Ohio | 2,749 | 58.8 | 61.7 | 59.9 | 55.6 | 64.6 | 64.2 | 50.4 | 57.1 | 78.4 | 58.2 | 61.9 | — | — | — |
| Oklahoma | 1,361 | 49.9 | 63.6 | 46.3 | 43.7 | 58.6 | 48.9 | 41.8 | 46.5 | 70.5 | 50.5 | 49.4 | — | 42.7 | — |
| Oregon | 1,031 | 57.9 | 65.7 | 62.3 | 49.9 | 63.8 | 59.0 | 53.3 | 56.1 | 75.6 | 57.3 | — | — | — | — |
| Pennsylvania | 2,462 | 59.2 | 69.6 | 57.4 | 58.0 | 65.1 | 60.5 | 52.3 | 57.8 | 77.3 | 59.1 | 50.5 | — | — | — |
| Rhode Island | 1,008 | 50.4 | 54.8 | 50.5 | 49.7 | 55.7 | 55.1 | 45.5 | 49.3 | 65.7 | 49.8 | — | — | — | — |
| South Carolina | 1,845 | 59.5 | 68.8 | 62.4 | 51.5 | 70.5 | 63.0 | 47.9 | 57.5 | 75.9 | 58.0 | 63.7 | — | — | — |
| South Dakota | 1,636 | 47.1 | 54.0 | 46.1 | 43.9 | 51.6 | 48.9 | 41.5 | 44.6 | 74.6 | 47.0 | — | — | 46.6 | — |
| Tennessee | 851 | 60.7 | 66.2 | 59.9 | 52.5 | 68.2 | 60.0 | 51.9 | 59.1 | 71.9 | 57.6 | 69.3 | — | — | — |
| Texas | 1,883 | 58.6 | 66.5 | 61.8 | 51.5 | 67.8 | 59.9 | 50.3 | 56.5 | 67.8 | 54.7 | 71.6 | — | — | 64.5 |
| Utah | 1,004 | 51.2 | 67.2 | 53.0 | 45.5 | 58.5 | 56.1 | 43.1 | 49.1 | 79.4 | 50.9 | — | — | — | — |
| Vermont | 1,759 | 56.2 | 62.4 | 57.3 | 53.0 | 63.6 | 56.3 | 51.9 | 54.3 | 77.8 | 55.7 | — | — | — | — |
| Virginia | 1,043 | 54.5 | 49.0 | 54.7 | 53.6 | 59.7 | 52.4 | 52.5 | 53.4 | 68.7 | 54.9 | 67.2 | — | — | — |
| Washington | 4,829 | 56.8 | 66.8 | 60.2 | 51.6 | 67.2 | 58.5 | 51.0 | 55.0 | 80.1 | 57.0 | — | 43.2 | 55.3 | 55.9 |
| West Virginia | 754 | 54.3 | 68.1 | 52.5 | 50.1 | 64.8 | 48.6 | 45.6 | 52.0 | 73.2 | 53.4 | — | — | — | — |
| Wisconsin | 1,575 | 57.2 | 62.8 | 59.3 | 51.9 | 63.7 | 58.8 | 49.9 | 55.4 | 76.2 | 56.7 | — | — | — | — |
| Wyoming | 1,896 | 56.9 | 64.3 | 59.1 | 52.7 | 63.5 | 59.0 | 49.3 | 54.5 | 75.7 | 56.8 | — | — | — | 54.0 |
| United States | 82,071 | 59.3 | 68.6 | 60.5 | 54.4 | 66.3 | 61.0 | 53.3 | 57.4 | 77.1 | 57.4 | 66.8 | 60.3 | 56.3 | 67.1 |

^a We restricted the prevalence estimates to the categories in which there were 50 or more respondents; blank cells indicate fewer than 50 respondents in this category. Confidence intervals are available from the authors on request.

^b The total number of employed respondents in the 2008 BRFSS data stratified by 50 states and Washington, DC (excluding respondents missing influenza vaccination data).