Oklahoma

Behavioral Risk Factor Surveillance System Annual Report 2008

Oklahoma State
Department of Health

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Oklahoma State Department of Health

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Executive Summary

The Behavioral Risk Factor Surveillance System (BRFSS) is a national, random-digit dialed telephone survey that monitors health behaviors, prevalence of disease, access to health care, and quality of life among the U.S. adult population. State health departments gather data from non-institutionalized adults aged 18 years and older, send the data to the Centers for Disease Control and Prevention (CDC) for editing and processing, and use the processed data to assess the health status of the population. This report provides a description of the health status of Oklahoma's adults using data from the core module of the 2008 BRFSS survey. The following illustrates some of the highlights of this report.

Health-related Quality of Life

- Almost 19% of Oklahoma adults considered their health to be fair or poor.
    - Fair or poor self-health ratings were more common among older individuals and those with lower education and income levels.
- Oklahoma adults experienced 4.2 physically unhealthy days during the past month.
    - Thirty-seven percent of Oklahoma adults experienced at least 1 day and 10% experienced more than 15 days of poor physical health.
    - Women, older adults, and those with lower levels of education and income endured the most physically unhealthy days.
- Oklahoma adults experienced 4.0 mentally unhealthy days during the past month.
    - Thirty-five percent of Oklahoma adults experienced at least 1 day and 9% experienced more than 15 days of poor mental health.
    - Women and those with lowest levels of education and income endured the most mentally unhealthy days.
- Oklahoma adults endured 5.0 days during the past month whereby their activity was limited due to poor physical or mental health.
    - Forty-two percent of Oklahomans perceived that poor health limited their ability to perform their usual activities on at least 1 day and 12.3% experienced restricted activity on more than 15 days.
    - Older adults, those without a high school diploma, and those of lower income levels endured more limited activity days.

Disability

- More than 26% of Oklahoma adults had some type of disability that limited their activity, and 9.3% utilized special equipment to assist them in performing their daily activities.
    - Older adults and those in low income categories were more likely to have a disability. Hispanics had the lowest rates of disability and special equipment use.

Access to Healthcare

- Almost 19% of Oklahoma adults were without health care coverage.
    - Younger adults, Hispanics, and those of lower education and income levels were less likely to have insurance.
- Twenty percent of Oklahoma adults did not have a personal health care provider.
    - Younger adults, Hispanics, and residents with less education and income were more likely to be without a personal health care provider.

- More than 17% of Oklahoma adults did not visit a health care professional for needed services because they could not afford the cost.
    - Younger adults, Hispanics, and residents with less education and income were more likely to go without needed services.
- Fifty-eight percent of Oklahoma adults had a routine check-up within the past year.
    - Women, older adults, and those with more formal education were more likely to have had a recent routine exam.

Burden of Disease

- More than 5% of Oklahomans had a history of heart attack, 5% had a history of angina/coronary heart disease (CHD), and 4% had a history of stroke.
    - Heart attack was more common among men, and both heart attack and stroke were more common among those with less formal education and lower incomes.
    - Hispanics had the lowest rates of cardiovascular disease, with few exceptions.
- More than 10% of Oklahoma adults had a history of diabetes.
    - Prevalence of diabetes increased with age and was greatest among American Indians and Blacks and among those with the lowest income.
- More than 35% of Oklahoma adults were overweight and almost 31% were obese.
    - Obesity was most prominent among Blacks and American Indians and those aged 25-64 years.
- Almost 9% of Oklahoma adults were living with asthma.
    - Women and individuals in the lowest income bracket were most likely to have asthma.
    - Hispanics had the lowest prevalence of asthma.
- Almost 19% of Oklahoma adults aged 45 years and older had fallen at least once in the past 3 months, and almost 37% of those who had fallen had a resulting injury.
    - Those aged 45-54 years and those with the lowest education and income had the highest average number of falls.

Health Behaviors and Preventive Measures

- Less than 25% of Oklahoma adults were smokers.
    - Current smoking status was more common among American Indians than other racial/ethnic groups and those with less education and income.
    - Almost 58% of smokers had attempted to quit within the past year.
- More than 31% of Oklahoma adults engaged in no leisure-time physical activity in the past month.
    - Physical inactivity was more common with age and with lower educational attainment and income level.
- More than 12% of Oklahoma adults had engaged in binge drinking, and fewer than 3% of adults were heavy drinkers.
    - Binge drinking and heavy drinking were more common among males.
    - Binge drinking declined with age, and was more common among those with higher income.
- Almost 58% of Oklahoma adults had visited an oral health professional within the past year.
    - Visiting an oral health professional within the past year was more common among women, Whites, and those with higher education and income levels.
    - Fifty percent of adults had at least 1 of their permanent teeth removed; prevalence of tooth extraction increased with age and with lower education and income.

    - Almost 27% of seniors had all of their teeth removed; complete tooth removal was more common among American Indians and those with lower socioeconomic status.
- Seventy-three percent of adults aged 65 years and older had received the flu vaccine within the past year and 71% of seniors had received the pneumonia vaccine at some point in their lives.
    - Seniors with higher education and income levels were more likely to have been vaccinated against the flu.
- One-third of Oklahoma adults aged 18 to 64 years had ever been tested for HIV.
    - Blacks and those aged 25-34 years were more likely to have been tested for HIV.
- In general, cancer screenings were more common among individuals with higher levels of education and income.
    - Sixty-nine percent of women aged 40 years and older and 72% of women aged 50 years and older had had a mammogram to screen for breast within the past 2 years.
    - Eighty-one percent of women with an intact uterus had a Pap test to screen for cervical cancer within the past 3 years.
    - Fifty-three percent of men aged 40 years and older had received a PSA test within the past 2 years and 73% had ever had a digital rectal exam to screen for prostate cancer.
    - More than 55% of Oklahomans aged 50 years and older had ever had a sigmoidoscopy or colonoscopy.
- Men more commonly engaged in unsafe motor vehicle practices.
    - Almost 18% percent of Oklahoma adults did not always wear a seatbelt when driving or riding in a car. Lack of seatbelt use was more common among men and those with less education.
    - More than 3% of Oklahoma adults had driven after having too much alcohol to drink. Alcohol-impaired driving occurred more often among men and those aged 18-24 years.
- Almost 69% of Oklahoma adults experienced insufficient sleep on at least 1 day, and more than 14% experienced insufficient sleep on all of the past 30 days.
    - Having no days of sufficient sleep was more common among those with less education and income.

Emotional Support and Life Satisfaction

- Almost 81% of Oklahoma adults were receiving the emotional and social support that they needed.
    - Whites and those with greater educational attainment and income were more likely to have received support.
- More than 94% of Oklahomans were generally satisfied with their lives.
    - Seniors and those with higher education and income levels were more likely to be satisfied with life.

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Introduction

The Behavioral Risk Factor Surveillance System (BRFSS) is the largest ongoing telephone survey of our nation's health. It was established by the Centers for Disease Control and Prevention (CDC) in 1984, and is implemented via the state health departments every year. Today, BRFSS data are collected in every state, the District of Columbia, and some U.S. territories.

BRFSS is administered using computer-assisted telephone interviewing software (CATI) to a stratified random sample of non-institutionalized residents aged 18 years and older. The survey consists of questions regarding health status, access to healthcare, chronic disease prevalence, and health behaviors. The core component is administered each year so that comparisons of the most critical health information can be made. Some items in the core rotate and are asked every other year rather than every year. There are standardized optional modules that states may choose to administer less frequently, and state-added items that are of specific interest to the individual state. Trained interviewers administer the survey monthly, following CDC protocol (available in the BRFSS Operational and User's Guide at http://www.cdc.gov/brfss).

Data for each calendar year are made available to health professionals and the public, and can be used for a variety of functions. BRFSS information is used to determine the health status of the population and the nation's success in meeting health-related objectives, such as those established by the Unites States government in Healthy People 2010 to enhance the health of the nation's population.[1] BRFSS information is also used to plan health promotion programs and create health-related policies.

Methodology

Sampling

BRFSS uses a multistage sampling design based on random digit dialing (RDD) procedures to select a representative sample of the non-institutionalized population age 18 years or older in Oklahoma. Individuals living in institutions (e.g., prisons) or group homes (e.g., dormitories) are not sampled, nor are cell phone only households. By using the RDD techniques, BRFSS produces a list of phone numbers from a pool of all existing phone numbers. The BRFSS employs a sampling method called disproportionate stratified sampling (DSS) in which phone numbers are grouped into two sampling strata. One stratum consists of unlisted residential phone numbers. The second is made up of listed residential phone numbers. The sampling design also stratifies the sample into six geographic regions. These strata are sampled at different rates, with the listed residential numbers sampled at a higher frequency. Participation in the survey is anonymous and voluntary. Every effort is made to respect the confidentiality of respondents.

Questionnaire

The 2008 questionnaire consisted of the core component, 5 optional modules, and 29 state-added items. The rotating core included items regarding falls, oral health, seatbelt use, drunk driving, sleep, and cancer screenings. The optional modules included questions about pre-diabetes and diabetes management, children in the household, childhood asthma prevalence, and human papilloma virus (HPV) vaccination for adults and children. The state-added items pertained to secondhand smoking, the smoking Quitline, sexual violence, gambling, mental illness, and aspirin use to prevent heart attack or stroke. This report describes data from the core module.

Procedures

Interviewers with the Oklahoma State Department of Health's in-house call center called phone numbers randomly generated by CATI. Up to 15 attempts were made to contact an individual for each telephone number dialed. Once the phone was answered, the interviewer determined if the telephone number was for a residential landline, and then CATI randomly selected an adult within the household to be interviewed. If the randomly selected individual agreed to participate, then the interview ensued. The respondent could terminate the interview at any time. The interview took 20-30 minutes to complete.

Data weighting

Each year the CDC assembles state-collected BRFSS data, generates a weighted analysis data set, and returns the weighted data to the respective state. The BRFSS sample data are weighted to adjust for unequal selection probability due to the disproportionate stratified sampling and to people living in households with varying numbers of telephones and adults. Data are also weighted to adjust for nonresponse among demographic groups (i.e., age, sex, and race). The weighting procedures yield BRFSS data more representative of the total population of adults in Oklahoma.

Statistical analyses

Due to the complex sampling scheme used by BRFSS, SAS® survey sampling procedures were used to produce prevalence estimates, standard errors (SE), and 95% confidence intervals (95% CI). These procedures accommodate the sample design and analysis weights when calculating the variance estimates. All prevalence estimates shown in this report were computed using weighted data. Respondents who answered that they did not know or who refused to answer were not included in the calculation of prevalence estimates. As a result, sample sizes vary by characteristics. Statistics were not reported if the unweighted sample size was less than 50 for the denominator or less than 5 for the numerator.

Characteristics of Survey Respondents

Surveys were completed by 7,812 Oklahoma residents in 2008. More than 64% of the respondents were female. One-third of survey respondents were aged 65 years and older. Respondents were primarily White, married, and had a post-secondary education. Just over half of respondents had an annual household income of $35,000 or more, of which 70% were earning at least $50,000 annually. Almost half of respondents were employed for wages or self-employed, and one-quarter were retired. Characteristics of the respondents, without weighting, are shown in Table 1. After applying weighting algorithms to respondents' data, estimates of the demographic profile of Oklahoma's population in 2008 were produced. BRFSS data demonstrated that 51.3% of the Oklahoma adult population was female, compared to 50.6% from the most recent U.S. Census estimates.[2] BRFSS data also showed that 70.6% of Oklahoma adults were White (non-Hispanic) and 6.3% of adults were Hispanic, compared to Census estimates of 71.8% and 7.2%, respectively, of Oklahoma residents of all ages.[2] In addition, BRFSS estimates showed that Oklahoma adults aged 25 years and older had received more formal education than Census estimates of Oklahomans, with 87.9% versus 80.6%, respectively, having graduated from high school or successfully completed the General Educational Development Test (GED), and 28.6% versus 20.3%, respectively, having received a bachelor's degree.[2] Age and racial/ethnic distributions are shown in Figures 1 and 2, respectively, and marital status, educational attainment, employment status, and annual household income are presented in Table 2.

Table 1. Characteristics of the Respondents and Estimates of the Non-institutionalized Oklahoma Population Aged 18 Years and Older (n = 7,812).

Characteristics	Frequency	Un-weighted %	Weighted %
Sex			
Male	2,785	35.6	48.7
Female	5,027	64.4	51.3
Age (years)			
18 - 24	279	3.6	10.5
25 – 34	864	11.1	20.5
35 – 44	1,036	13.3	17.6
45 – 54	1,468	18.8	18.2
55 – 64	1,592	20.4	14.7
≥ 65	2,573	32.9	18.4
Race/Ethnicity[a]			
White	6,013	77.2	70.6
Black	457	5.9	6.9
American Indian	466	6.0	8.5
Hispanic	309	4.0	6.3
Other	549	7.0	7.8
Marital Status[b]			
Married	4,352	55.8	64.2
Divorced	1,230	15.8	10.7
Widowed	1,236	15.9	6.6
Separated	169	2.2	1.9
Never married	685	8.8	14.0
Member of unmarried couple	121	1.6	2.6
Education[c]			
Less than high school	978	12.5	13.3
High school graduate/GED	2,530	32.4	32.9
Some college or technical school	2,178	27.9	27.2
College graduate	2,118	27.1	26.5
Employment[d]			
Employed or self-employed	3,788	48.6	58.1
Out of work	269	3.5	4.5
A homemaker	766	9.8	9.3
A student	131	1.7	3.8
Retired	2,124	27.2	15.9
Unable to work	722	9.3	8.4
Household Income[e]			
< $15,000	1,035	14.9	13.0
$15,000 - $24,999	1,402	20.2	19.3
$25,000 - $34,999	934	13.5	12.2
$35,000 - $49,999	1,070	15.4	15.5
≥ $50,000	2,504	36.1	40.1

[a]Missing data for n=18; [b]Missing data for n=19; [c]Missing data for n=8; [d]Missing data for n=12; [e]Missing data for n=867.

There were several gender differences in the estimates of Oklahoma residents' demographic characteristics. For example, estimates demonstrated that a greater proportion of the female versus male population was White (73.4% vs. 67.6%, respectively; data not shown), and the mean age of the female population (47.7 years; 95% CI: 47.0, 48.3) was higher than the mean age of the male population (45.6 years; 95% CI: 44.7, 46.5). Proportions of Oklahomans who were divorced or widowed, those who were homemakers, and those in the lowest income group were greater among the female than the male resident population.

Figure 1. Racial/Ethnic Distribution of Oklahoma's Non-institutionalized Residents Aged 18 Years and Older, by Sex.

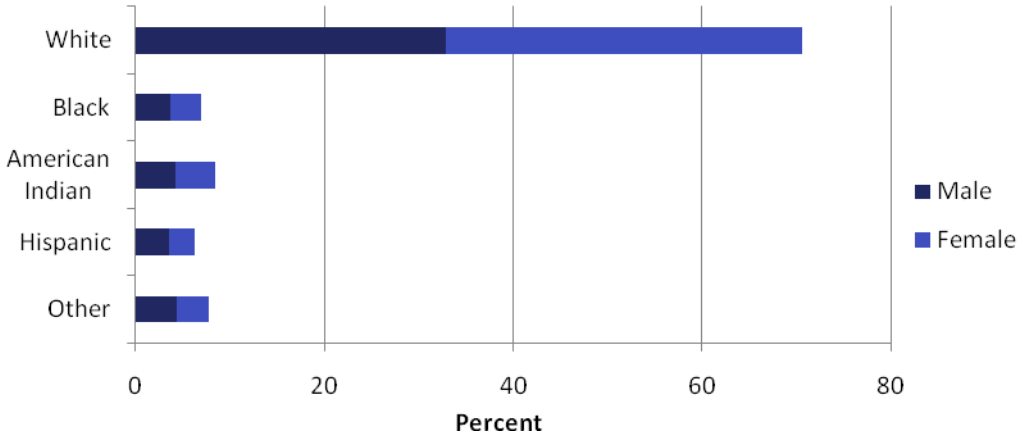


Figure 2. Estimated Age of Oklahoma Residents by Sex.

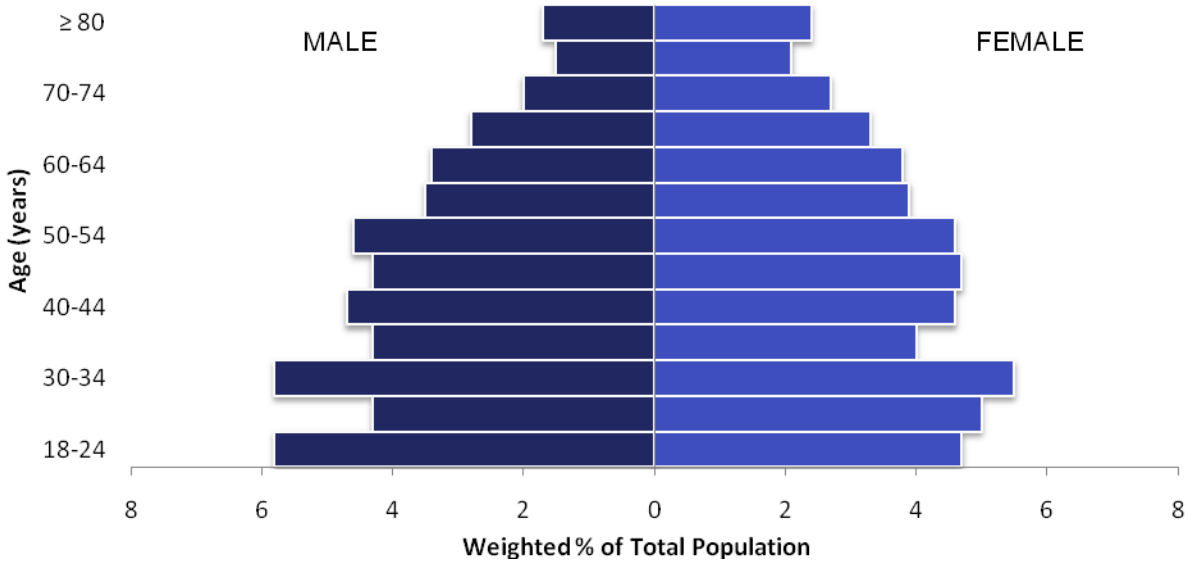


Table 2. Estimated (Weighted) Socio-demographic Characteristics of Oklahoma Residents by Sex.

	Males		Females	
	Weighted %	95% CI	Weighted %	95% CI
Marital Status				
Married	66.5	64.0, 69.0	62.1	60.5, 63.8
Divorced	9.5	8.3, 10.7	11.9	10.9, 12.8
Widowed	2.8	2.4, 3.3	10.2	9.4, 10.9
Separated	1.2	0.7, 1.7	2.5	2.0, 3.0
Never married	17.6	15.2, 20.1	10.5	9.2, 11.8
Member of an unmarried couple	2.4	1.5, 3.2	2.8	2.1, 3.6
Education				
Less than high school	14.2	12.2, 16.2	12.5	11.3, 13.6
High school graduate/GED	32.7	30.3, 35.1	33.1	31.5, 34.7
Some college or technical school	25.4	23.3, 27.6	28.9	27.3, 30.5
College graduate	27.7	25.6, 29.7	25.5	24.0, 27.0
Employment				
Employed or self-employed	66.8	64.6, 69.1	49.8	48.1, 51.6
Out of work	4.6	3.5, 5.7	4.4	3.6, 5.2
A homemaker	0.9	0.0, 1.9	17.2	15.9, 18.6
A student	3.8	2.4, 5.2	3.8	2.9, 4.8
Retired	15.5	14.3, 16.8	16.2	15.3, 17.2
Unable to work	8.3	7.1, 9.5	8.5	7.6, 9.4
Household Income				
< $15,000	11.1	9.3, 12.8	14.9	13.5, 16.2
$15,000 - $24,999	18.4	16.3, 20.5	20.1	18.6, 21.6
$25,000 - $34,999	11.3	9.7, 12.8	13.1	11.9, 14.3
$35,000 - $49,999	16.3	14.5, 18.2	14.6	13.3, 15.8
≥ $50,000	42.9	40.5, 45.4	37.4	35.6, 39.1

Health-Related Quality of Life

Health-related quality of life (HRQoL) refers to an individual's perception of his or her physical and mental health and ability to adapt to a changing environment.[1] While traditional measures of health focus on rates of disease and mortality, other means of determining an individual's health status and overall sense of well-being, such as HQRoL, encompass the broad definition of health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."[3] BRFSS has incorporated four items measuring HRQoL as part of its core component since 1993.[4] The first item is a general self-health rating. Self-health ratings are often comprised of a global question asking how an individual perceives his or her health. Such self-health ratings provide a general indication of one's quality of life and are used to assess changes and disparities in health status among populations. The other three items, termed the "healthy days" items, ask respondents to report the number of days during the past 30 days that their physical health was not good, their mental health was not good, and that poor physical or mental health kept them from doing their usual activities. Together, these items provide insight regarding how specific conditions, whether they be physical ailments, mental maladies, or social factors, may impact an individual's ability to perform usual activities.[4] In addition, the percentage of individuals experiencing frequent mental distress, defined as more than 14 days of poor mental health, can be determined.[4]

Self-rated health status. BRFSS interviewers asked respondents the following question: "Would you say that in general your health is excellent, very good, good, fair, or poor?" More than 81% of Oklahoma adults considered their health to be good or better. Conversely, 18.7% of Oklahomans deemed their health to be fair or poor, and perceptions of health differed by demographics. For example, a larger proportion of Blacks (23.6%) believed their health to be fair or poor compared to Whites (17.0%). The proportion of those who rated their health negatively increased with age, such that more than 4 times as many adults aged 65 years and older perceived their health negatively compared to adults aged 18-24 years (Figure 3). Fair and poor health ratings were also more common among those with less formal education and those with lower household incomes (Figure 4).

Figure 3. Percentage of Oklahoma Residents, by Age Group, Who Perceived Their Health to Be Fair or Poor.

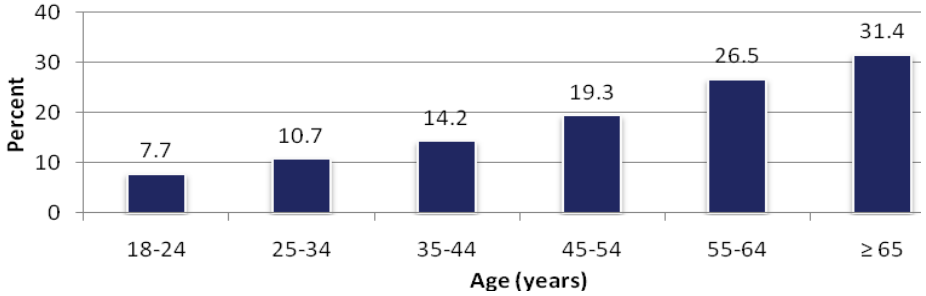
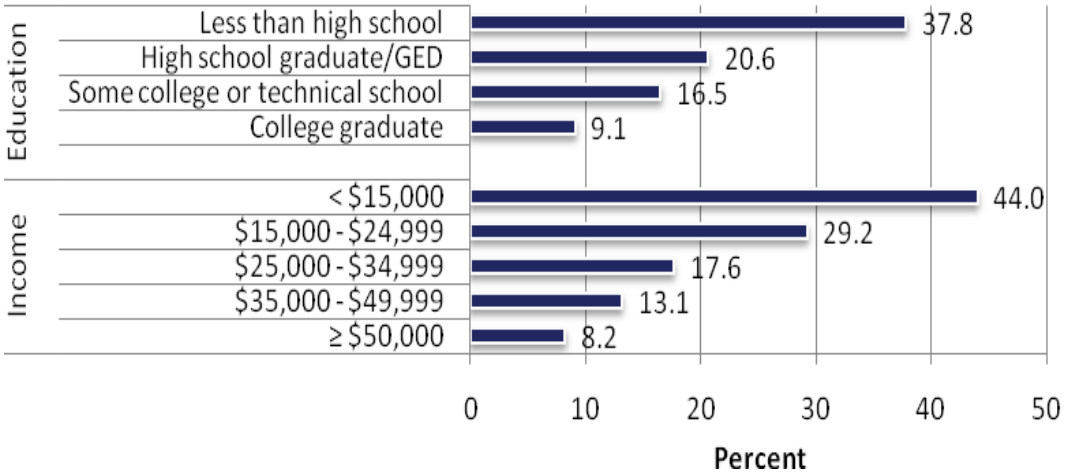


Figure 4. Percentage of Oklahoma Adults Who Perceived Their Health to Be Fair or Poor, by Education and Income.



Poor Health Days. Poor physical and/or mental health may interfere with an individual's ability to perform usual activities, resulting in a decline in HRQoL. BRFSS interviewers asked respondents to state how many of the past 30 days their physical health and mental health were not good, and the number of days that poor health kept them from doing their usual activities.

While 37% of Oklahoma adults experienced at least 1 day of the previous month during which their physical health was not good, 10.3% of residents endured more than 15 physically unhealthy days during the past month. On average, Oklahoma adults experienced 4.2 physically unhealthy days during the past month (Table 3). The average number of physically unhealthy days was highest for women, individuals aged 55 years and older, those with an annual household income of less than $15,000, and those with less than a high school education. The number of physically unhealthy days decreased with increasing educational attainment and income. Residents aged 18-24 years, college graduates, and those with a minimum household income of $50,000 per year experienced fewer than 3 physically unhealthy days in the past month. There were no racial/ethnic differences in the number of physically unhealthy days endured by individuals.

Almost 35% of Oklahoma adults experienced at least 1 day of the previous month during which their mental health was not good. Nine percent of Oklahoma adults endured more than 15 mentally unhealthy days during the past month. On average, Oklahomans experienced 4.0 mentally unhealthy days during the past month (Table 3). The average number of mentally unhealthy days was highest for women, those with an annual household income of less than $15,000, and those who were not high school graduates. Those aged 65 years and older experienced almost half the number of mentally unhealthy days as those in the other age groups. Blacks endured 1.6 more mentally unhealthy days than Whites. The mean number of mentally unhealthy days declined with increasing educational attainment and income. Residents over the age of 65 years, college graduates, and those whose income was $50,000 or more per year experienced fewer than 3 mentally unhealthy days in the past month.

Forty-two percent of Oklahomans perceived that poor health limited their ability to perform their usual activities on at least 1 of the previous 30 days, and 12.3% experienced restricted activity on more than 15 days during the previous month. While only 4.2% of individuals aged 18 – 24 years experienced limitations on more than 15 days of the month, 20% of those aged 55 – 64 years and 16.6% of those aged 65 and older experienced such frequent limitations of their activities (data not shown). Overall, Oklahoma adults endured 5.0 days during the previous month whereby poor physical or mental health limited their ability to engage in their usual activities (Table 3). The mean number of days during which activity was limited for any reason was higher for those aged 45 years and older versus those aged 44 years and younger. College graduates experienced fewer limited activity days than those with less formal education. Individuals in the lowest income group had the highest number of limited activity days, which was almost 4 times the number of limited activity days of those in the highest income group.

Table 3. Mean (Average) Number of Poor Health Days Experienced by Oklahoma Adults.

	Number of Days During the Past 30 Days That:		
	Physical Health Was Not Good (Mean ± SE)	**Mental Health Was Not Good (Mean ± SE)**	**Poor Health Limited Usual Activities (Mean ± SE)**
Total	4.2 ± 0.1	4.0 ± 0.1	5.0 ± 0.2
Sex			
Males	3.9 ± 0.2	3.4 ± 0.2	5.1 ± 0.3
Females	4.6 ± 0.1	4.6 ± 0.2	5.0 ± 0.2
Age (years)			
18 – 24	2.1 ± 0.3	4.2 ± 0.5	2.5 ± 0.5
25 – 34	2.7 ± 0.3	4.1 ± 0.3	3.3 ± 0.4
35 – 44	3.5 ± 0.3	4.5 ± 0.3	4.4 ± 0.4
45 – 54	4.8 ± 0.3	4.9 ± 0.3	6.3 ± 0.4
55 – 64	5.9 ± 0.3	4.2 ± 0.2	7.5 ± 0.4
≥ 65	6.1 ± 0.2	2.3 ± 0.2	6.2 ± 0.3
Race/Ethnicity			
White	4.1 ± 0.1	3.8 ± 0.1	4.9 ± 0.2
Black	4.9 ± 0.5	5.4 ± 0.6	5.0 ± 0.7
American Indian	4.7 ± 0.5	4.9 ± 0.5	6.0 ± 0.7
Hispanic	3.5 ± 0.5	3.4 ± 0.5	3.7 ± 0.7
Other	5.2 ± 0.5	4.4 ± 0.5	5.6 ± 0.6
Education			
Less than high school	6.6 ± 0.4	6.2 ± 0.5	6.9 ± 0.5
High school graduate/GED	4.7 ± 0.2	4.3 ± 0.2	5.4 ± 0.3
Some college or technical school	4.3 ± 0.2	4.2 ± 0.2	5.2 ± 0.3
College graduate	2.5 ± 0.2	2.5 ± 0.2	3.2 ± 0.2
Household Income			
< $15,000	9.3 ± 0.5	8.1 ± 0.5	9.8 ± 0.6
$15,000 - $24,999	5.6 ± 0.3	5.3 ± 0.3	6.3 ± 0.4
$25,000 - $34,999	4.0 ± 0.3	3.7 ± 0.3	5.0 ± 0.5
$35,000 - $49,999	3.5 ± 0.3	3.4 ± 0.3	3.7 ± 0.4
≥ $50,000	2.3 ± 0.1	2.6 ± 0.2	2.5 ± 0.2

Disability

Approximately 20% of Americans are afflicted with some type of disability, and estimates indicate that the majority of Americans will experience disability at some point in their life.[5] A disability can result from a congenital condition, an illness, or an injury, and can impact an individual's ability to perform activities of daily living. Additionally, those living with a disability may have poorer health outcomes and be more likely to engage in unhealthy behaviors than people who do not have a disability. For example, disabled individuals are more likely to experience pain and depression, and have higher rates of smoking, obesity, and physical inactivity.[6,7]

BRFSS interviewers asked respondents the following questions: “Are you limited in any way in any activities because of physical, mental, or emotional problems?” and “Do you now have any health problem that requires you to use special equipment, such as a cane, a wheelchair, a special bed, or a special telephone?” More than 26% of Oklahoma adults had some type of disability that limited their activity, and 9.3% utilized special equipment to assist them in performing their daily activities. Some socio-demographic disparities were apparent for responses to each question. Rates of disability increased with age, such that more than 36% of individuals aged 55 years and older were limited in their activities compared to 11% of 18-24 year-olds (Table 4). While rates of disability more than tripled from the lowest to the highest age group, the percentage of individuals who used special equipment increased by almost 9 times. The Hispanic population had a rate of disability that was 80% lower than Whites and Hispanics also had the lowest rate of equipment use of all racial/ethnic groups (Figure 5). College graduates had rates of disability and equipment use that were lower than those in the other education groups; no other differences by educational attainment were evident (data not shown). Rates of disability and equipment use decreased with higher income levels (Figure 6).

Table 4. Prevalence of Disability and Use of Special Equipment Among Oklahoma Adults by Age Group.

	Disability		Use of Special Equipment	
	Weighted %	**95% CI**	**Weighted %**	**95% CI**
Age (years)				
18 – 24	11.1	6.5, 15.8	2.4	0.0, 5.7
25 – 34	15.9	12.9, 19.0	3.0	1.7, 4.3
35 – 44	20.9	18.2, 23.6	4.9	3.4, 6.3
45 – 54	30.0	27.4, 32.7	10.9	9.1, 12.7
55 – 64	39.2	36.5, 41.9	12.9	11.0, 14.7
≥ 65	36.7	34.6, 38.9	20.3	18.5, 22.0

Figure 5. Prevalence of Disability and Use of Special Equipment Among Oklahoma's Racial/Ethnic Groups.

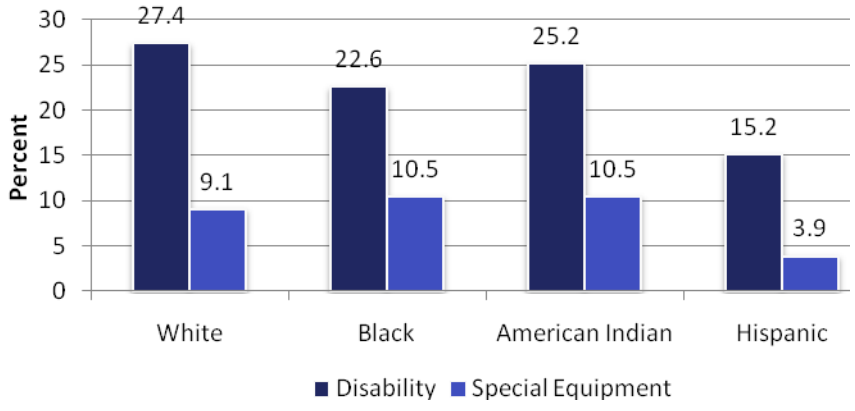
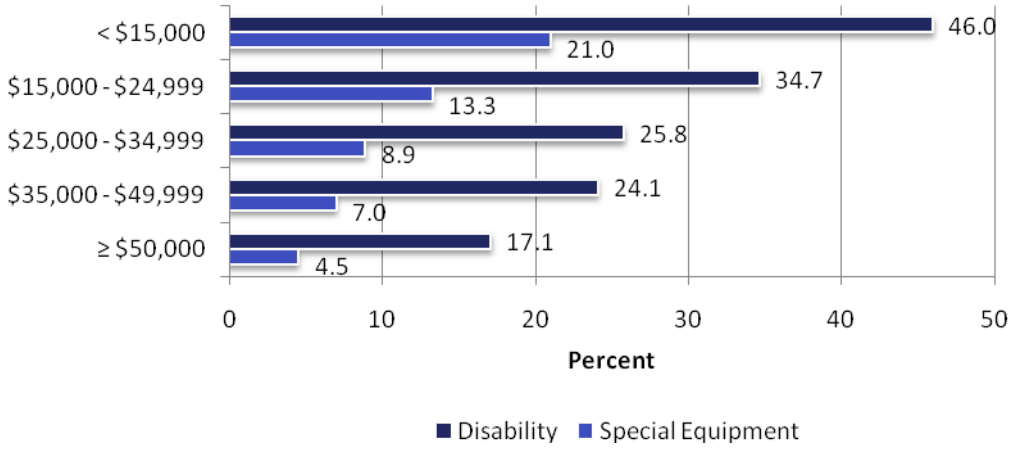


Figure 6. Rates of Disability and Special Equipment Use by Income.



Access to Health Care

Access to health care is a leading indicator of a population's health status.[1] BRFSS incorporates several items to assess access to health care, including the prevalence of health care coverage, use of a primary source for medical care, inability to seek medical attention due to cost, and time since last routine check-up.

In general, individuals without health insurance have poorer health outcomes.[8] Having health care coverage increases one's access to health services, including preventive services that may improve the likelihood of early identification and treatment of chronic illnesses. Similarly, having a personal health care provider is important because individuals who do not have a usual source of care may find it more difficult to obtain necessary services.[8] Almost 19% of Oklahoma adults were without health care coverage in 2008, and this rate increased to 22.8% when only adults aged 18-64 years were considered. Similarly, more than twenty percent of adults did not have a personal health care provider. Health care coverage and having a personal provider were related, such that those with health care coverage were almost 10 times more likely to have a personal provider than those without coverage (OR = 9.95, 95% CI: 8.14, 12.15). Estimates demonstrated that 12% of individuals with health care coverage did not have a personal health care provider compared to almost 58% of Oklahomans who were not covered under some type of health care plan.

Having health care coverage and having a personal health care provider followed similar patterns for each demographic. For example, the highest rate of uninsured adults was among Hispanics (45.1%), followed by Blacks (27.2%) and American Indians (19.6%). Whites had a lower rate of uninsured adults (15.4%) than Hispanics and Blacks. Similarly, Hispanics had the highest rate of not having a usual source of care (47.9%), followed by Blacks (28.7%). Again, Whites had a lower rate for this health care access measure. Among the age groups, younger individuals were less likely to have coverage or to have a usual source of care than older individuals (Figure 7). Those with lower educational attainment and income were less likely to have health care coverage or a personal health care provider (Table 5).

Figure 7. Health Care Access by Age Group Among Oklahoma Adults.

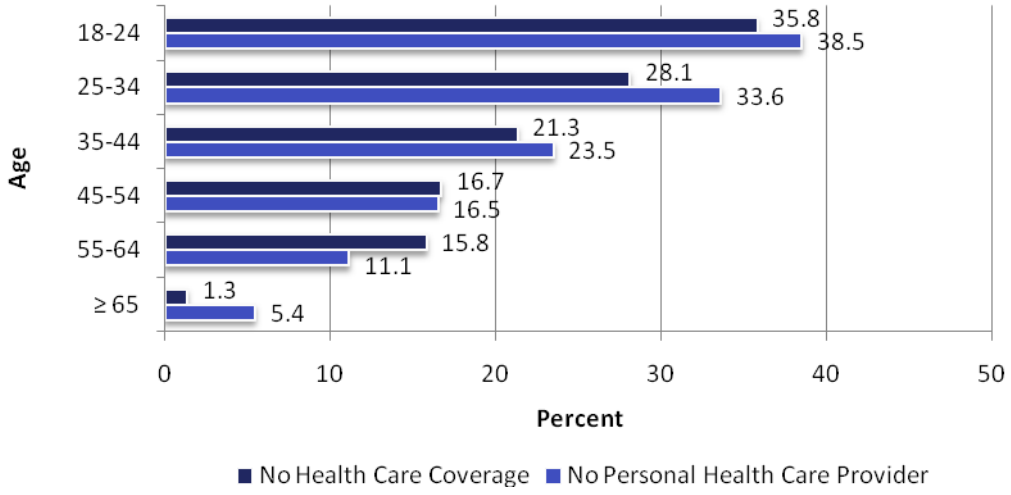
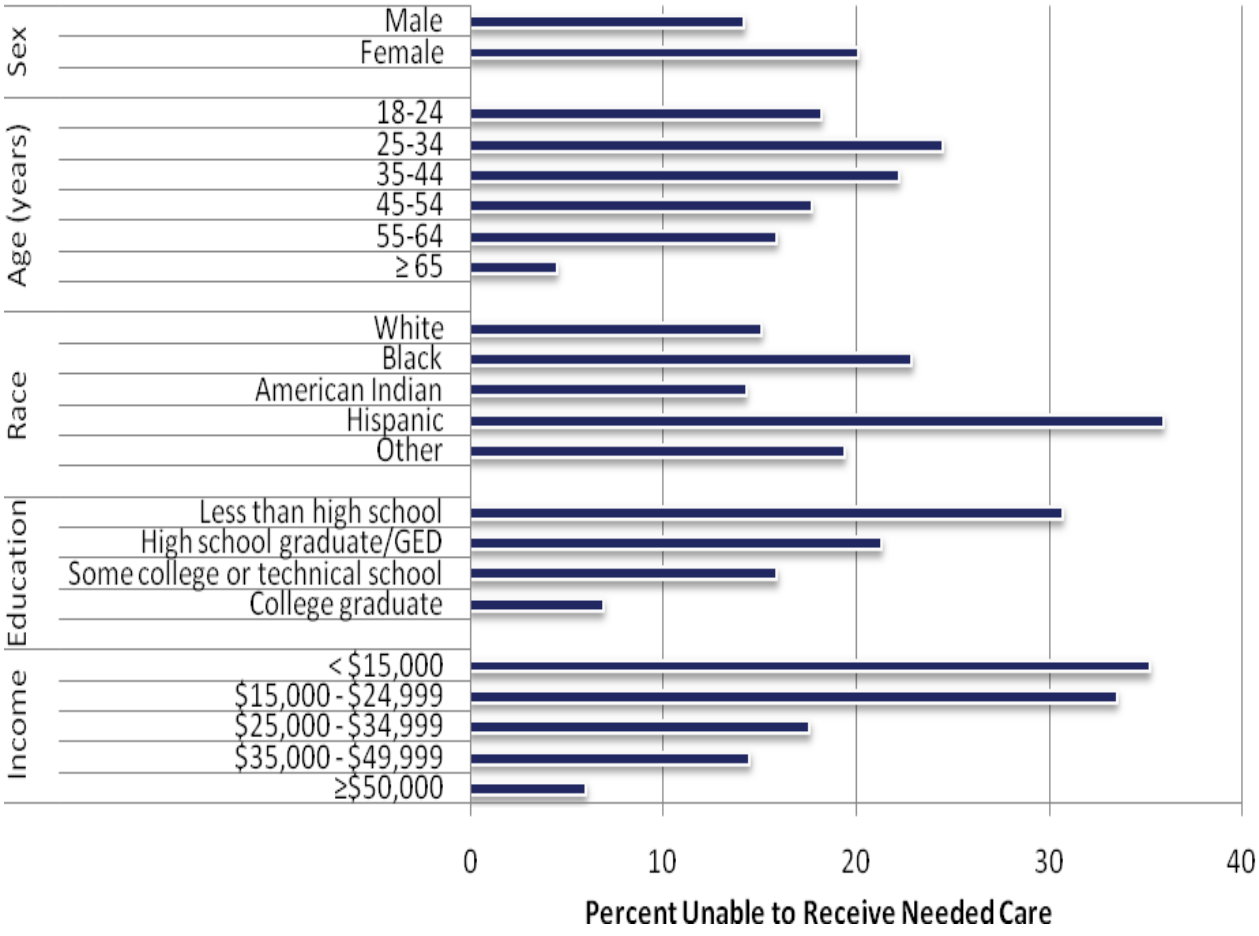


Table 5. Health Care Access Among Socio-economic Groups in Oklahoma.

	No Health Care Coverage		No Personal Health Care Provider	
	Weighted %	**95% CI**	**Weighted %**	**95% CI**
Education				
Less than high school	36.3	31.8, 40.8	35.1	30.3, 39.9
High school graduate/GED	25.8	23.1, 28.4	25.4	22.8, 27.9
Some college or technical school	14.1	12.1, 16.2	15.5	13.1, 17.9
College graduate	6.5	5.1, 7.9	13.0	11.1, 15.0
Household Income				
< $15,000	39.8	35.0, 44.6	31.1	26.8, 35.4
$15,000 - $24,999	35.3	31.5, 39.1	32.4	28.6, 36.1
$25,000 - $34,999	18.0	14.6, 21.5	20.8	17.1, 24.5
$35,000 - $49,999	15.0	11.9, 18.0	20.4	16.5, 24.2
≥ $50,000	5.8	4.6, 7.1	11.8	10.1, 13.5

In some instances, individuals forgo needed care and preventive services because they are unable to afford the cost of such services. Health conditions left untreated can worsen, eventually requiring immediate and expensive care.[1] More than 17% of Oklahoma adults were unable to visit a doctor for a needed service at some time during the past year because they could not afford the cost. Similar to the other indicators of health care access, differences in each demographic indicator were evident in characterizing those who were unable to receive needed care (Figure 8).

Figure 8. Disparities in Ability to Receive Medical Care Due to Cost



Attending routine medical check-ups may play a role in lowering risk of developing a chronic disease, detecting a disease in its early stages, and receiving timely and appropriate care.[9] For instance, recent estimates suggest that 22% of adults with high blood pressure are unaware they have the condition.[10] Because a person with undiagnosed high blood pressure will not be taking appropriate medication and may not be engaging in health-promoting activities, the person may develop extensive damage to his/her arteries, causing deterioration of the heart, kidneys, and other organs of the body. While 57.9% of Oklahoma adults had visited a health care professional for a routine examination within the past year, women, older adults, and those with more than a high school education were more likely than others in their respective demographic categories to have received a recent check-up (Table 6). Alternatively, 28% of adults either had their last exam more than 2 years ago or had never had a routine exam. Hispanics and those with the least education were the most likely groups in their demographic categories to have never had an exam (Table 6).

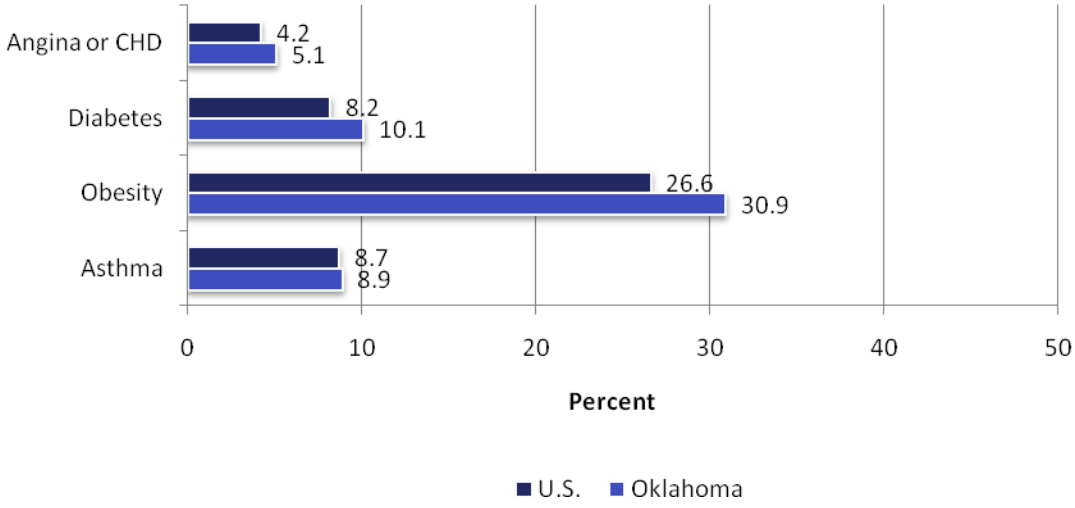
Table 6. Characteristics of Oklahoma Residents and Time Since Last Routine Medical Exam.

	Time Since Last Routine Checkup:			
	< 1 Year (% ± SE)	1 to < 2 Years (% ± SE)	≥ 2 Years (% ± SE)	Never (% ± SE)
Total	57.9 ± 0.8	14.3 ± 0.6	23.9 ± 0.7	3.9 ± 0.3
Sex				
Males	53.5 ± 1.3	13.6 ± 0.9	28.0 ± 1.2	4.8 ± 0.6
Females	62.0 ± 0.9	14.9 ± 0.7	20.0 ± 0.7	3.0 ± 0.3
Age (years)				
18 – 24	44.9 ± 3.8	19.1 ± 3.1	31.7 ± 4.1	4.3 ± 1.5
25 – 34	46.8 ± 2.0	16.4 ± 1.5	29.8 ± 1.8	7.0 ± 1.0
35 – 44	48.2 ± 1.8	16.3 ± 1.3	30.1 ± 1.7	5.4 ± 0.9
45 – 54	58.1 ± 1.5	14.1 ± 1.0	25.2 ± 1.3	2.6 ± 0.5
55 – 64	67.5 ± 1.3	12.1 ± 0.9	17.9 ± 1.1	2.5 ± 0.4
≥ 65	79.0 ± 0.9	9.2 ± 0.6	10.5 ± 0.7	1.4 ± 0.3
Race/Ethnicity				
White	57.4 ± 0.9	14.3 ± 0.7	25.1 ± 0.8	3.3 ± 0.3
Black	62.9 ± 3.2	14.6 ± 2.4	19.0 ± 2.9	3.4 ± 1.1
American Indian	66.0 ± 2.8	14.4 ± 2.0	16.6 ± 2.3	3.0 ± 1.1
Hispanic	48.2 ± 3.9	11.7 ± 2.2	27.0 ± 4.1	13.1 ± 2.5
Other	57.8 ± 3.3	16.0 ± 2.3	23.0 ± 3.1	3.2 ± 1.3
Education				
Less than high school	51.9 ± 2.4	11.3 ± 1.3	27.0 ± 2.5	9.8 ± 1.5
High school graduate/GED	54.2 ± 1.4	15.1 ± 1.0	26.8 ± 1.4	3.9 ± 0.6
Some college or technical school	59.9 ± 1.5	15.7 ± 1.2	21.4 ± 1.2	3.0 ± 0.5
College graduate	63.5 ± 1.3	13.2 ± 0.9	21.4 ± 1.2	2.0 ± 0.4
Household Income				
< $15,000	51.1 ± 2.4	14.3 ± 1.7	28.6 ± 2.5	6.0 ± 1.1
$15,000 - $24,999	52.5 ± 1.9	15.1 ± 1.4	26.9 ± 1.8	5.5 ± 1.0
$25,000 - $34,999	61.2 ± 2.1	13.0 ± 1.4	22.5 ± 1.8	3.3 ± 0.7
$35,000 - $49,999	56.9 ± 2.1	16.9 ± 1.9	23.9 ± 1.8	2.4 ± 0.6
≥ $50,000	61.4 ± 1.2	13.7 ± 0.8	21.5 ± 1.1	3.4 ± 0.5

Burden of Disease and Injury

The 2008 BRFSS survey inquired about the prevalence of specific chronic diseases, including cardiovascular disease, diabetes, obesity, and asthma. The proportion of individuals estimated to have had these chronic diseases in 2008 is presented in Figure 8 for Oklahoma and the United States.[11] The prevalence in Oklahoma was more than 20% higher for coronary heart disease (CHD) and diabetes and was 16% higher for obesity compared to the national data. The 2008 survey also asked about the occurrence of falls and injuries resulting from those falls for adults aged 45 years and older. A larger percentage of Oklahoma adults experienced falls compared to the national prevalence (18.9% versus 16.1%, respectively).[11] Oklahoma also had a higher proportion of its population who experienced injuries from a fall (36.7% versus 33.0% nationally).[11]

Figure 9. Prevalence of Chronic Conditions in the U.S. and Oklahoma, 2008.



Cardiovascular Disease

Heart disease and stroke are two of the leading causes of death in the United States, and both are significant contributors to disability and the economic healthcare burden. In 2008, heart disease and stroke accounted for approximately 37.1% of resident deaths in Oklahoma.[12] To assess the burden of cardiovascular disease in Oklahoma, the BRFSS survey asked respondents if a doctor, nurse, or other health care professional had ever told them that they have had a heart attack, angina or CHD, or a stroke. Almost 6% of Oklahomans had a history of heart attack, 5.2% had a history of angina/CHD, and 4.1% had a history of stroke (Table 7). Half of residents who had a history of angina/CHD have had a heart attack compared to fewer than 3% of those without a history of CHD.

Some demographic characteristics in relation to cardiovascular disease are presented in Table 7. Significantly more men than women had suffered a heart attack. Fewer Blacks and Hispanics had been diagnosed with angina/CHD compared to Whites, and Hispanics had lower rates of heart attack compared to Whites and American Indians and lower rates of stroke compared to all other racial/ethnic groups. Occurrence of heart attack and stroke were less common among those with higher educational attainment and income. Only those in the highest income bracket had lesser occurrence of angina/CHD compared to those with a household income of $25,000 or less.

Table 7. Characteristics of Oklahomans Who Had a History of Heart Attack, Angina/CHD, and/or Stroke.

	Heart Attack		Angina or CHD		Stroke	
	Weighted %	95% CI	Weighted %	95% CI	Weighted %	95% CI
Total	5.6	5.0, 6.1	5.2	4.6, 5.7	4.1	3.6, 4.6
Sex						
Males	7.2	6.2, 8.1	5.9	5.0, 6.8	4.2	3.4, 5.1
Females	4.0	3.5, 4.5	4.4	3.9, 5.0	3.9	3.4, 4.4
Race/Ethnicity						
White	5.8	5.2, 6.4	5.6	5.0, 6.2	3.7	3.3, 4.2
Black	4.5	2.3, 6.7	3.1	1.6, 4.6	5.2	2.8, 7.7
American Indian	6.5	4.1, 8.8	6.5	3.4, 9.5	7.1	4.0, 10.2
Hispanic	2.1	0.4, 3.8	2.0	0.3, 3.6	1.4	0.3, 2.4
Other	5.7	3.8, 7.7	4.3	2.9, 5.7	4.8	3.1, 6.5
Education						
Less than high school	9.2	7.2, 11.1	5.7	4.2, 7.1	6.6	5.0, 8.2
High school graduate/GED	6.0	5.0, 7.0	5.4	4.3, 6.4	4.4	3.4, 5.4
Some college or technical school	5.2	4.2, 6.1	5.3	4.4, 6.3	3.9	3.0, 4.8
College graduate	3.6	2.8, 4.4	4.5	3.6, 5.3	2.5	1.8, 3.2
Household Income						
< $15,000	9.7	7.7, 11.7	7.6	5.9, 9.3	8.4	6.5, 10.2
$15,000 - $24,999	9.7	8.0, 11.4	7.0	5.7, 8.4	6.2	4.7, 7.7
$25,000 - $34,999	6.0	4.4, 7.5	5.0	3.6, 6.4	4.7	3.3, 6.0
$35,000 - $49,999	3.8	2.7, 4.9	4.6	3.4, 5.9	2.4	1.6, 3.2
≥ $50,000	3.0	2.3, 3.7	3.8	2.9, 4.6	1.9	1.2, 2.6

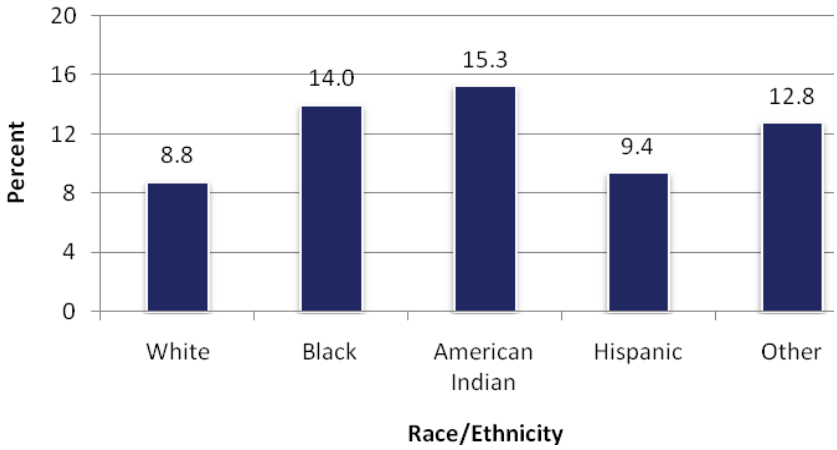
Diabetes

Diabetes is a chronic disease whereby the body's inability to produce sufficient amounts of insulin or its inability to recognize the action of insulin leads to high levels of glucose (sugar) in the blood. High blood glucose levels damage the arteries, causing kidney malfunction, retinopathies, neuropathies, and other debilitating conditions. Diabetes is a risk factor for cardiovascular disease and is associated with hypertension and other chronic illnesses. Diabetes is also a leading cause of death in the United States. BRFSS interviewers asked respondents if a doctor had ever told them that they had diabetes. National data from the 2008 BRFSS estimated the burden of diabetes to be 8.2% among the U.S. adult population.[11] In Oklahoma, 10.1% of adults had a history of diabetes. The prevalence of diabetes increased with each successive age group, with rates more than double for individuals aged 45 years and older compared to younger individuals (Table 8). Diabetes was more common among the Black (14.0%) and American Indian (15.3%) populations compared to Whites (8.8%; Figure 10). Diabetes was also more common among those with a household income of less than $15,000 (14.8%) compared to those with an income of $35,000 to $49,999 (9.8%) and $50,000 or more (7.2%).

Table 8. Prevalence of Diabetes By Age Group.

	Weighted %	95% CI
Age (years)		
18 – 24	-	-
25 – 34	2.9	1.6, 4.2
35 – 44	6.6	4.9, 8.3
45 – 54	11.1	9.3, 13.0
55 – 64	15.8	13.7, 17.9
≥ 65	21.5	19.6, 23.5

Figure 10. Prevalence of Diabetes by Race/Ethnicity.



Obesity

Body mass index (BMI) is an indirect health risk indicator that is used to classify an individual's weight status. BMI is computed using a person's weight and height and is presented as kg/m^2 [weight (kilograms) / height*height ($meters^2$)]. BRFSS interviewers asked respondents to report their weight and height, and BMI was calculated from these data. Estimates demonstrated that more than 35% of Oklahomans were overweight ($25.0 \leq BMI < 30.0$) and almost 31% were obese ($BMI \geq 30.0$) in 2008. While the proportion of obese males and females was similar, a larger percentage of males than females was overweight (41.9% vs. 29.4%, respectively; Figure 11). American Indians had a higher combined prevalence of overweight and obesity compared to Whites (73.7% versus 64.8%, respectively). However, both American Indians and Blacks had larger percentages of obese individuals compared to Whites (Figure 12). Obesity was least common among those aged 18-24 years and those aged 65 years and older; there were no differences among the 10-year age categories spanning 25 to 64 years (Figure 13). The only socioeconomic difference evident in the obesity rates was that college graduates had a lower rate of obesity than those who had some college or technical education (28.1% versus 33.5%, respectively).

Figure 11. Weight Status of Men and Women in Oklahoma.

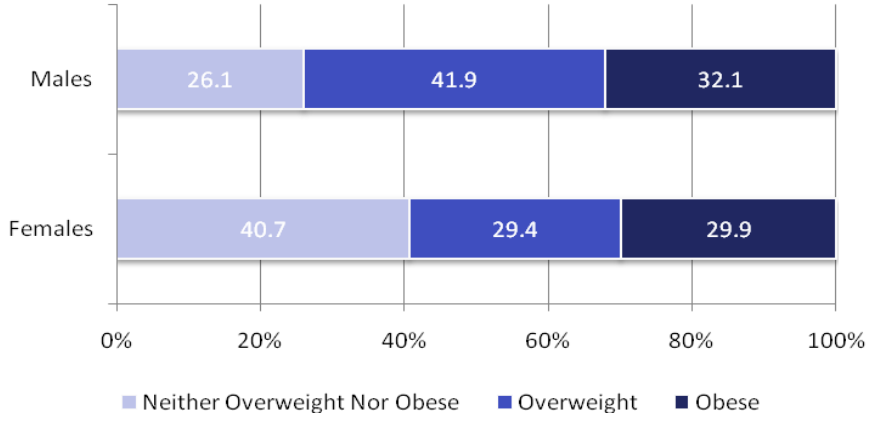


Figure 12. Prevalence of Obesity by Race/Ethnicity Among Oklahoma Adults.

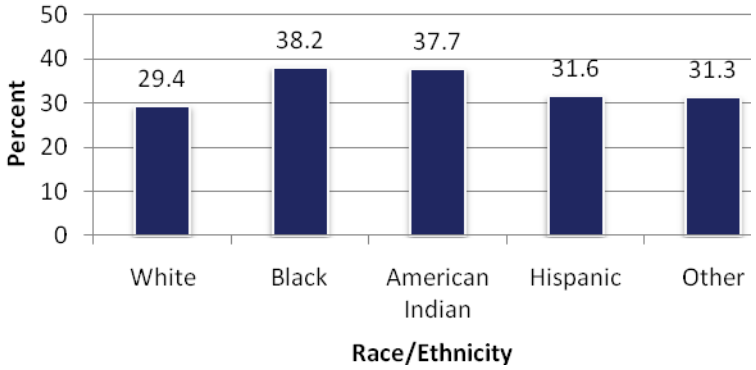
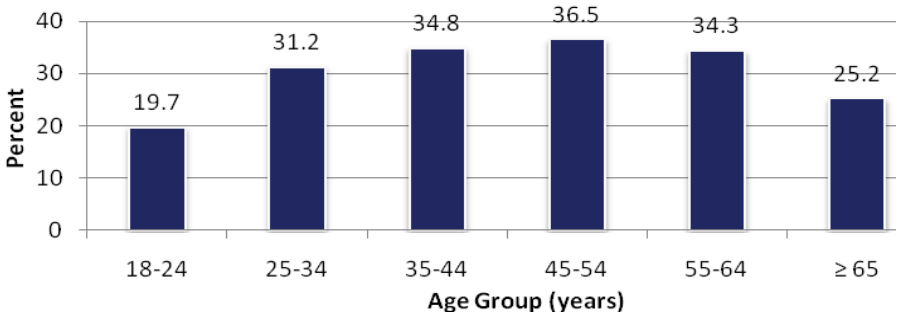


Figure 13. Prevalence of Obesity by Age Group Among Oklahoma Adults.

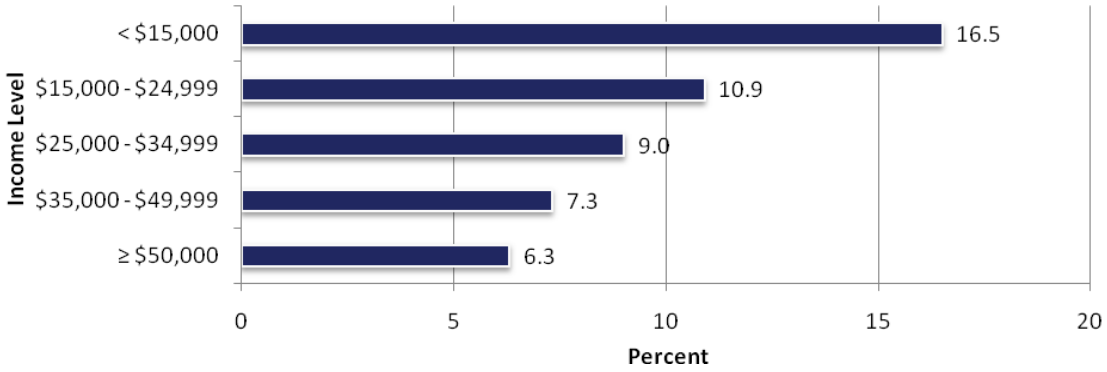


Asthma

Asthma is a lung disease that is caused by inflammation of the airways, which restricts the size of the airways and makes breathing difficult. BRFSS interviewers asked respondents if a doctor, nurse, or other health professional had ever told them that they had asthma and if so, did they still have asthma. From these data, individuals who answered yes to both questions were classified as having asthma.

It was estimated that 8.9% of Oklahoma adults had asthma in 2008. Asthma did not distinguish among the age groups, and was more common among women (11.3%) than men (6.4%). While most racial/ethnic groups had rates of asthma around 8.8-12.1%, Hispanics demonstrated a significantly lower rate of 3.6%. College graduates had a lower rate of asthma than those with less formal education, and individuals with a household income of $50,000 or more had a rate lower than individuals with a household income of less than $25,000. The lowest income group had the highest rate of asthma compared to all other income groups (Figure 14).

Figure 14. Adult Asthma Prevalence by Income Level.



Falls

Falls were the 3rd leading cause of unintentional injury death among adults aged 45-64 years and the leading cause of injury death among adults aged 65 years and older in 2006. Falls were also the most common cause of non-fatal injuries among adults aged 45 years and older.[13,14] Among seniors, falls can lead to deterioration in quality of life and even death. For example, the majority of hip fractures are the result of a fall, and almost 20% of seniors with hip fractures die within 1 year of their injury.[15]

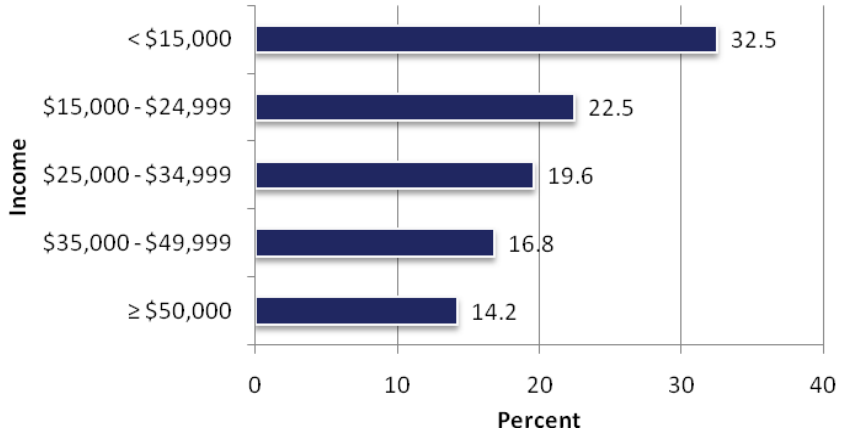
The 2008 BRFSS survey included questions regarding the prevalence of falls and resulting injuries. Adults aged 45 years and older were asked how many times they had fallen in the past 3 months, with a fall defined as unintentionally coming to rest on the ground or another lower level. Respondents who had fallen were then asked if any of the falls had caused an injury such that regular activities were limited for at least one day or they went to see a doctor. In 2008, 18.9% of Oklahoma adults aged 45 years and older had fallen at least once in the past 3 months. The mean number of falls among those who fell at least one time was 2.3 (95% CI: 2.0, 2.5), and the range was 1 to 35 falls. There was no difference in the proportion of individuals who had fallen at least once by sex, age group, or race/ethnicity. However, the mean number of falls among those who fell at least once was lower for those aged 65 years and older compared to those aged 45-54 years (Table 9). Fewer college graduates (14.9%) had fallen at least once compared to those with less formal education (19.7-23.3%), and the mean number of falls was also disproportionate (Table 9).

The percentages of those who fell and mean number of falls were higher as household income decreased (Table 9; Figure 15).

Table 9. Mean (Average) Number of Falls of Adults Aged 45 Years and Older Who Had Fallen at Least Once, by Age Group, Education, and Income (n = 1,078).

	Mean	95% CI
Age (years)		
45-54	2.35	2.04, 2.66
55-64	2.61	1.95, 3.28
≥ 65	1.85	1.67, 2.03
Education		
Less than high school	2.90	2.33, 3.46
High school graduate/GED	2.34	1.79, 2.88
Some college or technical school	2.04	1.76, 2.32
College graduate	1.93	1.60, 2.27
Household Income		
< $15,000	3.49	2.53, 4.46
$15,000 - $24,999	2.36	2.05, 2.68
$25,000 - $34,999	1.89	1.54, 2.24
$35,000 - $49,999	1.81	1.48, 2.15
≥ $50,000	1.76	1.46, 2.06

Figure 15. Percentage of Adults Aged 45 Years and Older Who Fell at Least Once in the Past 3 Months, by Income.



Of those who had fallen, 46.3% had fallen at least twice in the past 3 months. College graduates (34.3%) and those with some post-secondary education (42.9%) had smaller percentages of individuals who had fallen at least twice compared to those without a high school diploma (58.4%). Individuals with a household income of $25,000 or more (36-40%) had a lower percentage of repeated falls compared to those with an income of less than $25,000 (55-63%). Also of those who had fallen, 36.7% of individuals had a fall

resulting in an injury. Falls that resulted in injury were more common among those in the lowest education and income groups (Table 10).

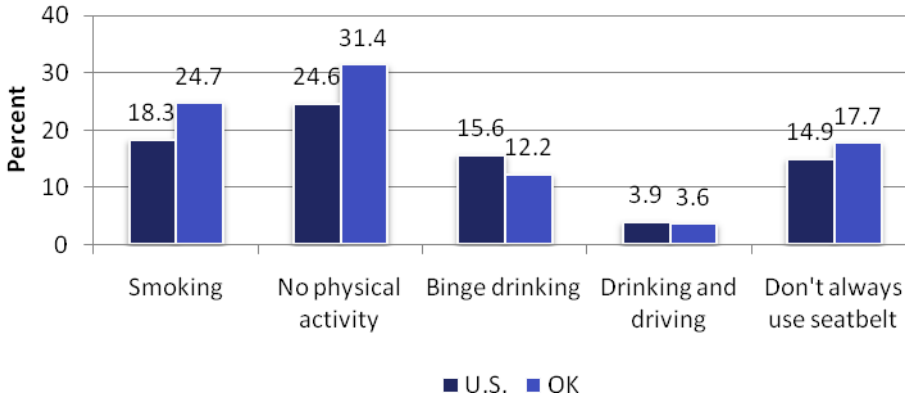
Table 10. Percentage of Adults Aged 45 Years and Older Whose Fall Resulted in Injury, by Education and Income (n = 1,078).

	Weighted %	95% CI
Education		
Less than high school	49.3	40.2, 58.4
High school graduate/GED	32.9	27.2, 38.5
Some college or technical school	36.5	30.3, 42.6
College graduate	33.5	26.2, 40.8
Household Income		
< $15,000	55.8	48.1, 63.5
$15,000 - $24,999	41.1	33.8, 48.5
$25,000 - $34,999	33.6	24.3, 42.9
$35,000 - $49,999	28.4	19.5, 37.3
≥ $50,000	23.8	17.3, 30.3

Health Behaviors and Preventive Measures

Behavior directly impacts health status. Many of the chronic conditions that worsen an individual's quality of life and increase risk of premature death can be reduced and/or managed by making lifestyle changes. Tobacco use is the largest contributor to mortality in the United States, with poor diet and physical inactivity running a close second and excessive alcohol consumption third.[16] With influenza and pneumonia combined being a top ten leading cause of death, vaccinations against these illnesses are extremely important. Screenings for cancers can lead to early detection and increase the chance of recovery from the disease. BRFSS asked respondents about their status with respect to several behaviors that impact morbidity and premature mortality. The percentages of Oklahoma adults who engaged in specific unhealthy behaviors are presented in Figure 16 along with the corresponding U.S. rates. Oklahomans have higher rates for most of these unhealthy behaviors compared to the national averages.[11]

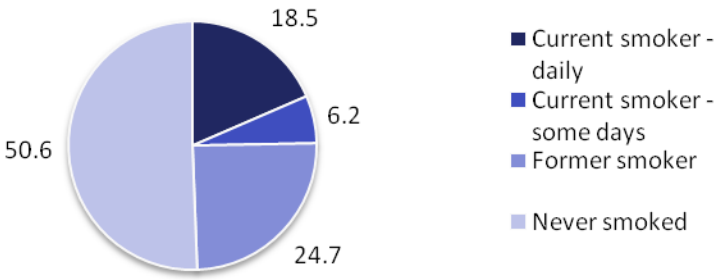
Figure 16. Percentage of U.S. and Oklahoma Adults Who Engaged in Selected Unhealthy Behaviors, 2008.



Tobacco Use

Smoking is the leading cause of preventable death in the United States, impacting 1 in 5 deaths each year.[16] Three questions are included in the BRFSS survey regarding tobacco use. Respondents were asked if they had smoked at least 100 cigarettes in their entire life, and if they now smoke every day, some days, or not at all. From these data, current smoking status was determined. Respondents who smoked some or every day were also asked if they had stopped smoking for one day or longer during the past 12 months because they were trying to quit smoking. For the first time since 2001, Oklahoma's smoking rate declined to less than 25% of the adult population. In addition, there were as many former smokers as there were current smokers (Figure 17).

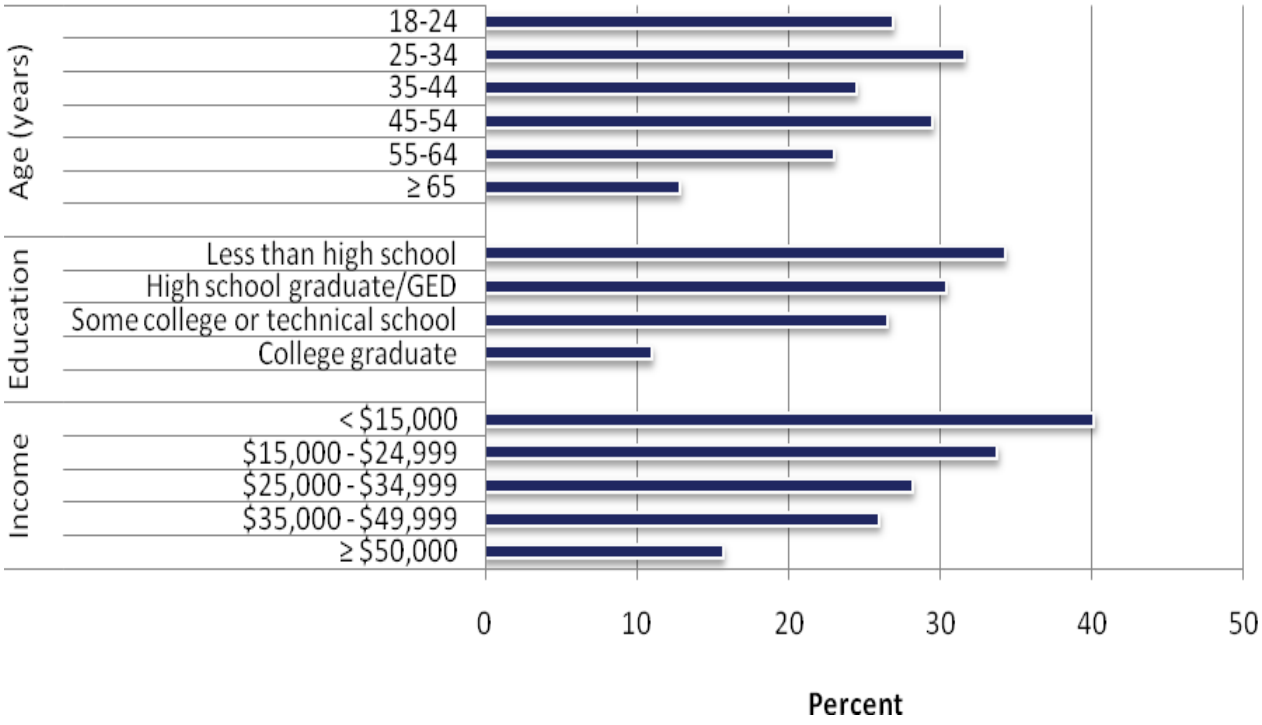
Figure 17. Adult Smoking Status.



Smoking rates were not significantly different between males (26.5%) and females (23.1%). Current smoking status was more common among American Indians (31.2%) than Whites (23.7%), but no other racial/ethnic differences were evident. Prevalence of smoking differed by age, educational attainment, and

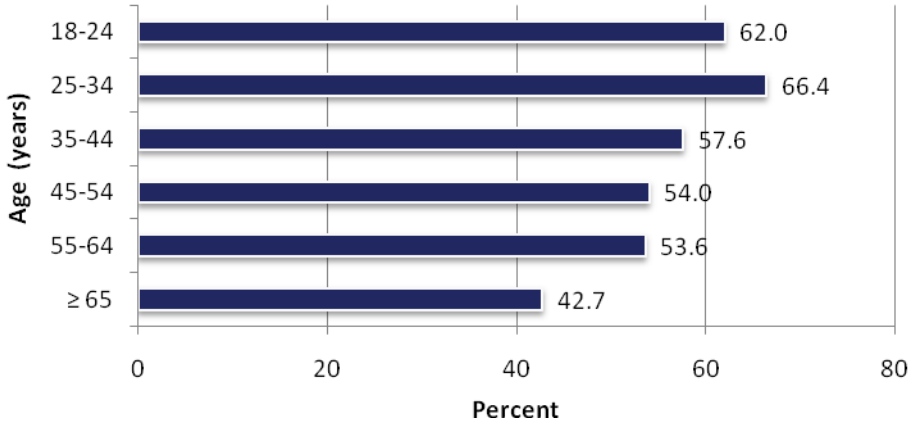
annual household income (Figure 18). Adults aged 65 years and older had the lowest smoking rate of all age groups. In addition, those aged 55-64 years had a lower smoking rate than those aged 45-54 years and those aged 25-34 years; however, rates for the 10-year age groups between ages 18 and 54 years were not significantly different from each other. College graduates had the smallest percentage of current smokers, and individuals with some post-secondary education had a smaller rate of smoking than those without a high school diploma. Likewise, those with the highest household income had the smallest percentage of current smokers. Smoking rates generally declined as household income increased.

Figure 18. Percentage of Smokers by Age, Education, and Income.



Of Oklahoma adults who were classified as current smokers, 57.6% had stopped smoking for 1 or more days in the previous 12 months as an attempt to quit smoking. Men and women were equally likely to have made attempts to quit smoking, and a higher percentage of Hispanics (71.9%) attempted quitting than Whites (54.4). There were some differences in smoking cessation by age group. Those aged 65 years and over had lower attempted cessation rates than those aged 25 to 44 years, while individuals aged 55-64 years had lower rates of attempted cessation than those aged 25-34 years (Figure 19).

Figure 19. Percentage of Smokers Who Attempted to Quit, by Age.



Physical Inactivity

Physical inactivity is unhealthy and is related to higher risk of morbidity and premature mortality.[17,18] Each year BRFSS interviewers ask respondents the following question, "During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise?" In 2008, 31.5% of Oklahoma adults had not participated in any physical activity during their leisure time in the past month, ranking Oklahoma 49 out of the 50 states in the percent of the population who obtain at least some type of physical activity monthly.[11]

Surprisingly, there were no significant differences by sex or racial/ethnic group in the percentage of individuals who were completely inactive. However, there were differences by age and socioeconomic factors. Individuals aged 45 years and over had higher rates of inactivity than those aged 18-44 years (Figure 20). The percent of Oklahomans who were inactive decreased with each successive level of educational attainment (Figure 21). Inactivity also declined with increasing levels of household income (Figure 21).

Figure 20. Percentage of Adults Who Engaged in No Leisure-time Physical Activity, by Age.

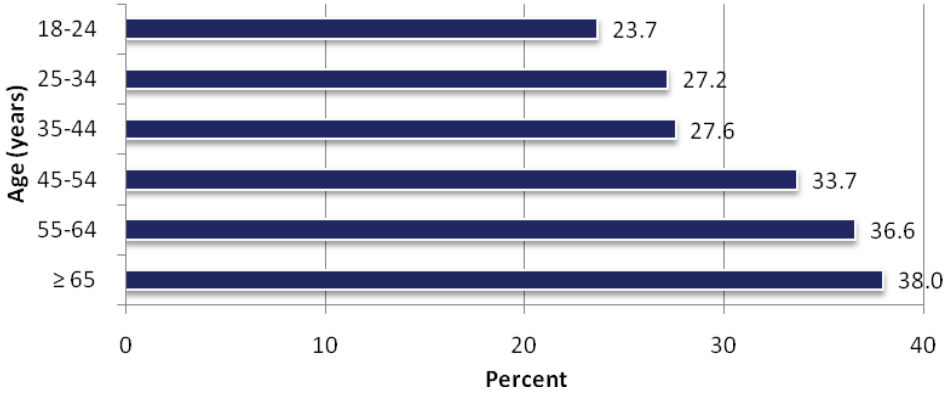
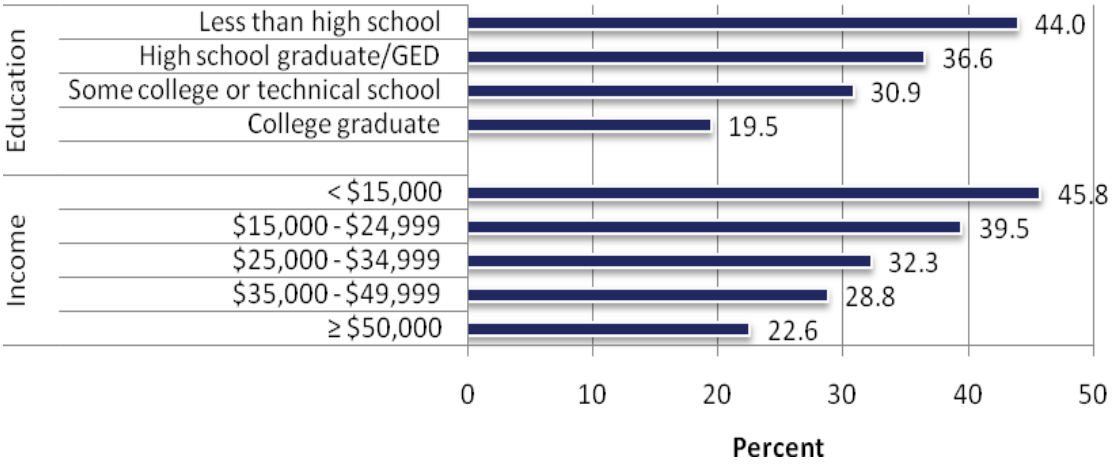


Figure 21. Percentage of Adults Who Engaged in No Leisure-time Physical Activity, by Education and Income.

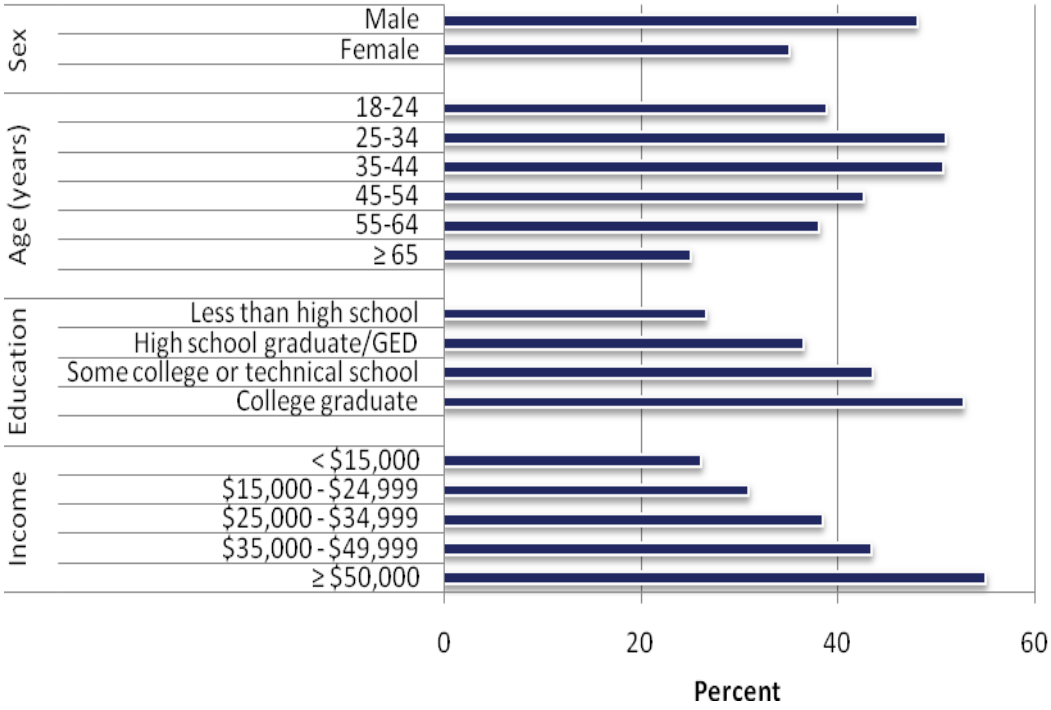


Alcohol Use

Excessive alcohol consumption is the third leading cause of preventable death in the United States.[16] Excessive alcohol consumption includes heavy drinking and binge drinking. Heavy drinking refers to a man having more than 2 drinks or a woman having more than 1 drink per day, and binge drinking refers to a man consuming 5 or more drinks or a woman consuming 4 or more drinks on a single occasion. The BRFSS survey includes a series of questions regarding frequency of alcohol consumption in the past 30 days, number of drinks per occasion of drinking, and the largest number of drinks on a single occasion in the past 30 days. The survey also includes a question about the frequency of drinking 5 or more drinks for men or 4 or more drinks for women on a single occasion.

A smaller portion of Oklahoma adults drank any alcohol compared to the national population in 2008.[11] Almost 42% of Oklahoma adults had consumed at least 1 alcoholic drink in the past 30 days, compared to 54.4% of U.S. adults. Past-month alcohol consumers were primarily male, educated, and had a higher household income (Figure 22). The largest percentage of alcohol consumers by age group was among the 25-34 and 35-44 year age groups, while those aged 65 years and older had the smallest percentage of past-month alcohol consumers (Figure 22).

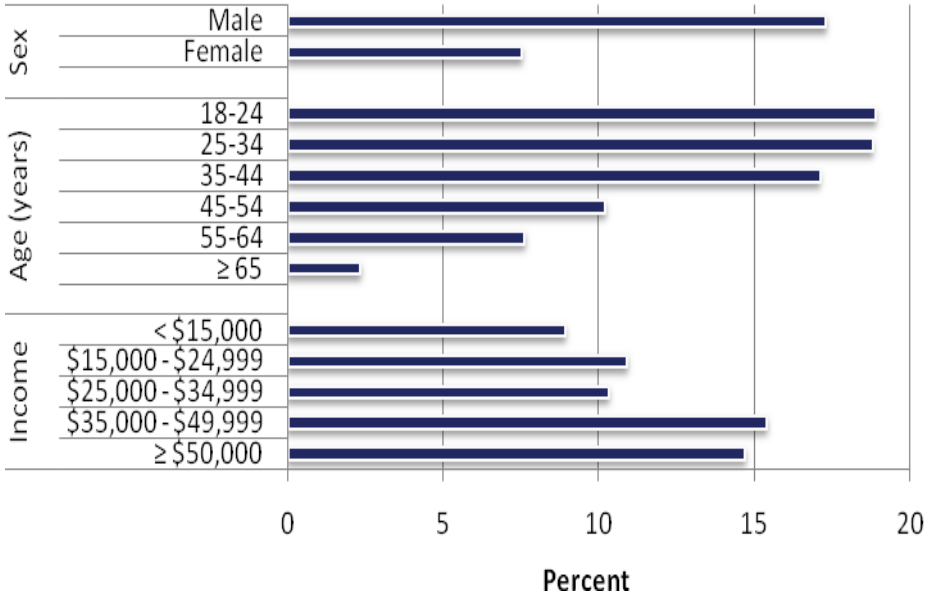
Figure 22. Characteristics of Oklahoma Adults Who Consumed at Least One Alcoholic Beverage in the Past Month.



Fewer than 3% of Oklahomans were estimated to have been heavy drinkers. There were few demographic differences among heavy drinkers, perhaps because the sample size of respondents classified as heavy drinkers was so small. There were more male (3.8%) than female (2.1%) heavy drinkers. Also, a larger percentage of individuals with a household income of $35,000-$49,999 were heavy drinkers compared to those with a household income of $25,000 or less (5.2% versus 2.3-2.5%, respectively). Of those who were classified as heavy drinkers, 87.6% were also binge drinkers. Alternatively, fewer than 10% of non-heavy drinkers were also binge drinkers.

More than 12% of Oklahoma adults had engaged in binge drinking. Binge drinking was twice as common among males as females, and rates of binge drinking declined with age (Figure 23). There was a larger proportion of binge drinkers among those with a household income of $35,000 or more compared to those whose income was less than $15,000 (Figure 23).

Figure 23. Percentage of Binge Drinkers by Sex, Age, and Household Income.



Oral Health

Oral health is an important component of general health. Oral health practitioners seek to reduce or prevent the many disorders affecting the oral, dental, and craniofacial tissues. Many individuals do not realize that oral health is related to other chronic conditions, such as heart disease and diabetes, or that quality of life may suffer as oral health deteriorates.[19]

Tooth decay (caries) and periodontal (gum) diseases are the most common dental diseases.[19] In the 1930's, researchers discovered lower prevalence of tooth decay in communities with drinking water that was naturally fluoridated.[19] This led to widespread fluoridation of public drinking water in the United States, one of the CDC's 10 great public health achievements of the 20th century.[20] Fluoride helps to prevent tooth decay by inhibiting the breakdown of tooth enamel, assisting in the recovery of broken-down enamel, and inhibiting the action of the bacteria that cause tooth decay.[21] Despite this public health achievement, 30% of the nation's public water supply is not fluoridated.[20] In 2006, the percentage of people in each state that were served by sufficiently fluoridated public water systems ranged from 8.4% in Hawaii to 100% in the District of Columbia.[20] Almost 74% of Oklahoma's population receiving public water was obtaining enough fluoride to reduce tooth decay.[20]

In addition to receiving fluoride in drinking water and many other products (e.g., toothpaste, mouthwash), good oral hygiene practices and regular visits to a dentist, dental hygienist, or other oral health professional assist individuals with maintaining oral health. The 2008 BRFSS survey included three items pertaining to oral health. Respondents were asked how long it had been since they last visited a dentist or dental clinic

for any reason, how long it had been since they last had their teeth cleaned by a dentist or hygienist, and how many of their teeth had been removed because of tooth decay or gum disease.

In 2008, 57.9% of Oklahoma adults had visited a dentist, dental hygienist, or dental clinic within the past year. Visiting a dental professional within the past year was more common among women and among Whites compared to Blacks and American Indians (Table 11). Prevalence of a past-year visit increased with greater educational attainment and income (Table 11).

Table 11. Percentage of Oklahoma Adults Who Visited a Dental Professional Within the Past Year.

	Weighted %	95% CI
Sex		
Males	54.3	51.8, 56.8
Females	61.4	59.7, 63.1
Age (years)		
18 – 24	50.2	42.7, 57.7
25 – 34	58.0	54.1, 61.8
35 – 44	61.0	57.6, 64.4
45 – 54	59.0	56.1, 61.9
55 – 64	60.3	57.6, 63.0
≥ 65	56.4	54.2, 58.6
Race/Ethnicity		
White	60.8	59.1, 62.4
Black	49.0	42.8, 55.2
American Indian	52.5	46.8, 58.2
Hispanic	52.1	44.4, 59.7
Other	50.8	44.6, 56.9
Education		
Less than high school	37.0	32.5, 41.5
High school graduate/GED	51.5	48.8, 54.2
Some college or technical school	59.8	57.0, 62.6
College graduate	74.4	72.0, 76.8
Household Income		
< $15,000	35.9	31.5, 40.3
$15,000 - $24,999	38.9	35.3, 42.5
$25,000 - $34,999	52.4	48.3, 56.6
$35,000 - $49,999	60.9	56.9, 65.0
≥ $50,000	75.3	73.2, 77.5

Individuals with extensive damage to their teeth or gums may have their teeth removed. This practice was common in the early 1900s, when people expected to be toothless by the age of 45 years.[19] The addition of fluoridated drinking water and other preventive measures have reduced the occurrence of tooth loss (edentulism) due to disease. Regardless, 2008 BRFSS survey results demonstrated that 50.1% of Oklahoma adults had at least 1 of their permanent teeth removed, and 26.8% of seniors aged 65 years and older had all of their teeth extracted. Percentages of individuals by demographic group who had teeth extracted are presented in Table 12. Men were no more likely than women to have had teeth extracted, but

group differences were evident for other demographic characteristics. Prevalence of at least 1 tooth extraction increased with age and with lower education and income levels. Prevalence of complete edentulism (complete tooth loss) at the age of 65 years or older was also more common among those with lower socioeconomic status. A smaller percentage of Hispanic adults had any teeth removed compared to Black and American Indian adults, whereas complete edentulism was more common among American Indian than White and Black seniors.

Table 12. Percentage of Oklahoma Adults Who Had Permanent Teeth Extracted.

	At Least 1 Tooth Extracted, Aged 18+ Years (n = 7,812)		All Teeth Extracted, Aged 65+ Years (n = 2,573)	
	Weighted %	**95% CI**	**Weighted %**	**95% CI**
Sex				
Males	49.6	47.1, 52.1	25.8	22.3, 29.3
Females	50.5	48.8, 52.2	27.6	25.1, 30.0
Age (years)				
18 – 24	13.7	9.0, 18.5	-	-
25 – 34	32.5	28.8, 36.3	-	-
35 – 44	38.2	34.9, 41.6	-	-
45 – 54	56.5	53.6, 59.4	-	-
55 – 64	68.4	65.8, 71.0	-	-
≥ 65	81.5	79.7, 83.2	26.8	24.8, 28.8
Race/Ethnicity				
White	49.7	48.0, 51.3	24.6	22.6, 26.7
Black	56.0	49.6, 62.3	23.7	14.3, 33.1
American Indian	54.7	48.9, 60.5	46.5	34.8, 58.1
Hispanic[a]	40.8	33.5, 48.1	-	-
Other	50.3	44.1, 56.5	36.9	27.9, 45.9
Education				
Less than high school	65.8	60.8, 70.8	43.8	37.9, 49.7
High school graduate/GED	57.3	54.5, 60.1	28.5	25.2, 31.8
Some college or technical school	50.0	47.2, 52.9	24.6	20.5, 28.6
College graduate	33.4	31.0, 35.8	11.8	8.2, 15.5
Household Income				
< $15,000	65.7	60.7, 70.7	47.7	41.3, 54.0
$15,000 - $24,999	63.7	59.8, 67.7	35.8	31.2, 40.5
$25,000 - $34,999	56.0	51.7, 60.4	27.0	21.6, 32.4
$35,000 - $49,999	52.3	48.3, 56.3	17.4	12.6, 22.3
≥ $50,000	37.0	34.8, 39.2	7.8	5.2, 10.4

[a]Percent not computed because there were fewer than 50 observations in the denominator.

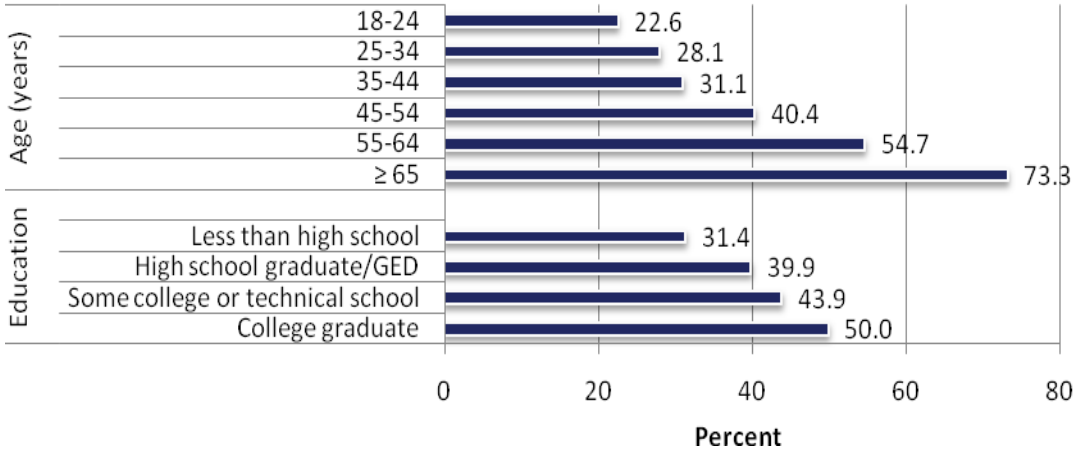
Immunizations

In the early 1900s, the top five leading causes of death included infectious diseases: influenza and pneumonia combined, tuberculosis, and diarrhea and enteritis combined.[22] In addition, infectious diseases

such as measles and poliomyelitis resulted in co-morbidity, disability, or death for thousands of individuals.[23] The widespread use of vaccinations in the United States and around the world has resulted in few individuals suffering from these debilitating infectious diseases, though the diseases are still present in the world today.[23] The 2008 BRFSS survey inquired about vaccination status for two common infectious diseases: influenza and pneumonia. Influenza and pneumonia together comprise the 8th leading cause of death in the United States. These illnesses are easily preventable with appropriate vaccinations and good hygiene practices. The influenza (flu) vaccination is recommended yearly for certain high-risk populations, such as young children and adults aged 50 years and older.[24] A single dose of the pneumococcal vaccine is recommended for specific populations, such as young children and adults aged 65 years and older, American Indians, and people with certain chronic illnesses.[25]

Influenza vaccination. BRFSS asked respondents if they had received the flu vaccine (either the shot or the nasal spray) within the past 12 months. More than 42% of all adults had been vaccinated against flu within the past year, with 98% having gotten the shot and less than 2% having gotten the nasal spray. There was a small but significant difference in the proportion of men and women who were immunized, with 39.7% of men and 45.3% of women having received the flu vaccine. Only 28.6% of Hispanics and 33.7% of Blacks had been vaccinated against flu compared to approximately 45% of Whites and American Indians. Immunization rates increased as age increased, with only 22.6% of the youngest adults and 73.3% of the oldest adults having been immunized within the past year (Figure 24). Fifty percent of college graduates had been immunized, and rates of immunization declined as level of educational attainment declined (Figure 24). Those with a household income of at least $50,000 had a higher rate of immunization than individuals in the two lowest income brackets, with household incomes of less than $25,000 (46.2% versus 37-38%, respectively).

Figure 24. Percentage of Adults Who Received the Flu Vaccine Within the Past Year, by Age and Education.

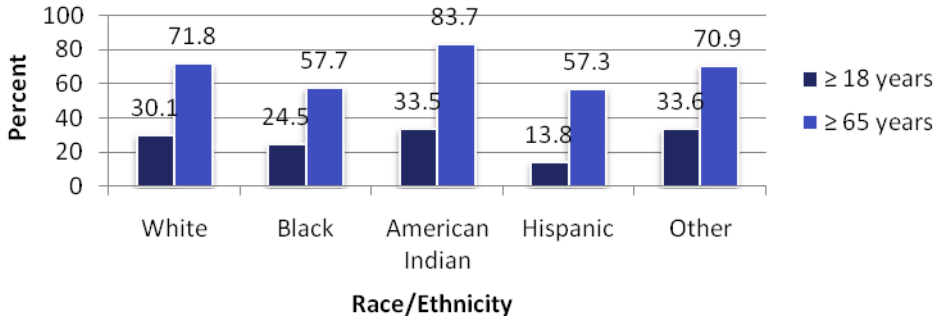


Among adults aged 65 years and older, there were also some differences by race/ethnicity, education, and income in the percentages that received the flu vaccine. Blacks (45.5%) were less likely to have been

vaccinated than Whites (75.9%) and American Indians (73.4%). Rates of immunization among seniors were higher among those with at least a high school education (73.9-79.8%) compared to those who had not completed high school (62.8%). Seniors in the highest income bracket (79.0%) had higher rates of immunization than those with a household income of less than $15,000 (66.0%).

Pneumonia vaccination. BRFSS interviewers asked respondents if they had ever received the pneumonia vaccine. Fewer than 30% of Oklahoma adults had ever received the pneumonia vaccine. However, 71.4% of adults aged 65 years and older had received the vaccine. American Indian seniors had a higher rate of pneumonia immunization than White and Black seniors (Figure 25). Among adults aged 18 years and older, immunization rates were similar, with the exception of Hispanics, who had the lowest rate (Figure 25). In the general population, those with the highest household income (22.6%) were the least likely to have ever been vaccinated against pneumonia, and college graduates had a lower rate of immunization than those with some post-secondary education.

Figure 25. Percentage of Adults Who Had Ever Received the Pneumonia Vaccine, by Race/Ethnicity.



HIV Screening

More than one million people are living with HIV/AIDS in the U.S. today, and it is estimated that more than 55,000 new cases occur each year.[26] HIV/AIDS can lead to poor quality of life and, for more than ten thousand people each year, death.[26] Of those diagnosed with HIV/AIDS in 2006, more than 70% were males, more than half were Black, and almost 60% were aged 25-44 years.[26] Because approximately one-quarter of Americans living with HIV/AIDS are unaware that they have the condition,[27] diagnosing HIV/AIDS is important for treatment and preventing the transmission of the disease. The BRFSS survey asks individuals aged 18 to 64 years about ever having been tested for HIV, the location of the last test, and type of test.

The most recent data available in Oklahoma demonstrates that more than 4,500 individuals are living with HIV or AIDS in Oklahoma (125 per 100,000 population).[28] Yet results from the 2008 BRFSS survey estimate that 1 in 3 Oklahoma adults aged 18 to 64 years had ever been tested for HIV in a manner separate from testing that occurs with a blood donation. Differences in having been tested were evident across age and racial/ethnic groups, but not across sex or socioeconomic categories (Table 13). Those

aged 25-44 years had the highest rates of HIV testing, and those aged 55-64 years had the lowest rate of all the age groups. Blacks were more likely than Whites, Hispanics, and those in the "Other" category to have been tested. Almost 21% of those who had been tested for HIV had gotten a rapid HIV test whereby they received their results within a couple of hours.

Table 13. Percentage of Oklahomans Aged 18-64 Years Who Had Ever Been Tested for HIV (n = 5,239).

	Weighted %	95% CI
Sex		
Males	32.1	29.4, 34.7
Females	36.2	34.2, 38.3
Age (years)		
18 – 24	27.5	21.5, 33.5
25 – 34	48.9	44.9, 52.8
35 – 44	43.7	40.2, 47.2
45 – 54	26.3	23.7, 29.0
55 – 64	17.0	14.9, 19.1
Race/Ethnicity		
White	32.4	30.5, 34.3
Black	49.9	42.8, 56.9
American Indian	42.3	35.9, 48.7
Hispanic	31.1	24.1, 38.1
Other	28.4	22.3, 34.5
Education		
Less than high school	30.4	25.3, 35.5
High school graduate/GED	32.6	29.4, 35.7
Some college or technical school	38.6	35.4, 41.8
College graduate	33.2	30.3, 36.1
Household Income		
< $15,000	38.0	32.7, 43.3
$15,000 - $24,999	38.7	34.0, 43.3
$25,000 - $34,999	38.8	33.6, 44.0
$35,000 - $49,999	34.0	29.4, 38.6
≥ $50,000	32.0	29.5, 34.5

BRFSS interviewers asked respondents who indicated having ever been tested for HIV (n = 1,606) where their last test had been administered. A private doctor's or HMO office, clinic, and hospital were the most commonly indicated locations for having an HIV test (Table 14). Females were more likely to have been tested at a private doctor's or HMO office compared to males (47.6% versus 24.4%, respectively), and males were more likely than females to have been tested at a correctional facility (4.4% versus 0.8%, respectively). Adults aged 55 to 64 years (27.6%) were more likely to have been tested in a hospital than those aged 18 to 24 years (9.8%) and those aged 25 to 34 years (17.6%). Adults with an annual household income of at least $50,000 (43.1%) were more likely to have been tested in a private doctor's or HMO office than those whose income was less than $15,000 (27.1%).

Table 14. Location of Last HIV Test Administration of Oklahomans Who Had Ever Been Tested for HIV (n = 1,606).

Location	n	Weighted %	95% CI
Private doctor or HMO office	611	36.8	33.9, 39.8
Counseling and testing site	59	3.5	2.3, 4.7
Hospital	317	19.9	17.6, 22.3
Clinic	369	24.9	22.3, 27.6
Correctional facility	29	2.5	1.4, 3.6
Drug treatment facility	19	1.1	0.5, 1.6
At home	32	1.6	0.9, 2.2
Somewhere else	144	9.7	7.7, 11.6
Missing	26	-	-

Cancer Screenings

Malignant neoplasms, also known as cancers, are the second leading cause of death in the United States. In 2008, just over 24% of deaths in Oklahoma were due to cancers.[12] Cancer refers to an uncontrolled growth of cells in the body, and the name of the cancer is specific to where the cancer began its growth.[29] Not including cancers of the skin, of which most cases are easily treatable, the most common cancers are of the breast among women and of the prostate among men.[30] Though cancers of the lung and bronchus are the most common causes of cancer deaths, cancers of the breast and prostate are the next deadliest forms of cancer deaths among women and men, respectively.[30] Breast cancer is the most common cause of cancer deaths for Hispanic women.[30]

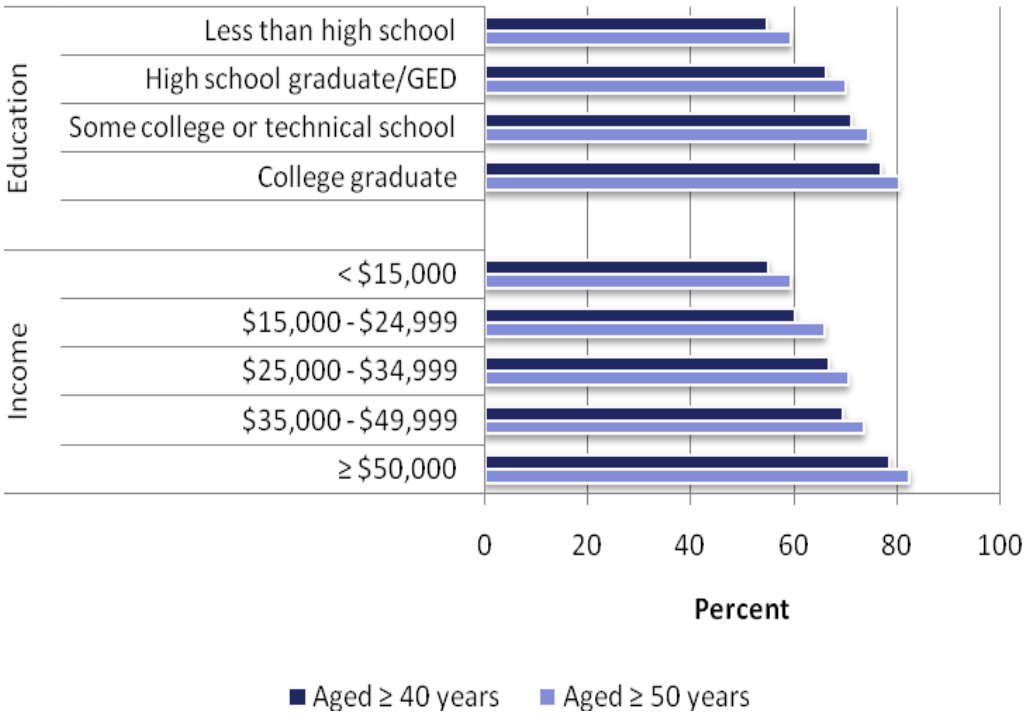
Screening and early detection is important for some types of cancers to improve the chances that treatment will be successful and to reduce the risk of death. While the CDC recommends screening for breast, cervical, and colorectal cancers, medical experts disagree as to whether prostate screening reduces risk of death due to prostate cancer.[31] Regardless, the 2008 BRFSS survey included questions about screening for breast and cervical cancers among women, prostate cancer among men, and colorectal cancer among all adults.

Breast cancer. There are three types of screening tests for breast cancer: mammograms, clinical breast exams, and self-exams. A mammogram is an x-ray of the breast, and is the only screening that has been shown to reduce risk of death. Mammograms are recommended every 1-2 years for women over the age of 40 years.[29] A clinical breast exam, during which a health professional feels the breasts for lumps, serves to complement regular mammography screenings. Some organizations recommend clinical breast exams every 3 years for women aged 20-39 years and yearly for women aged 40 years and older.[32] A breast self-exam helps women become aware of the normal look and feel of their breasts, and may enable them to identify changes that occur between mammograms and clinical exams.[32]

Female BRFSS respondents were asked if they had ever had a mammogram and if so, how long ago the mammogram occurred. Data are reported for women aged 40 years and older (n = 3,969), and also aged 50 years and older (n = 3,169), as these are critical periods for mammogram screenings.[32] Among women aged 40 years and older, 68.9% (95% CI: 67.2, 70.6) had a mammogram within the past 2 years. There were no racial/ethnic differences in the percentages of who had been recently screened, but socioeconomic differences were apparent. Recent mammograms were more common as educational attainment and

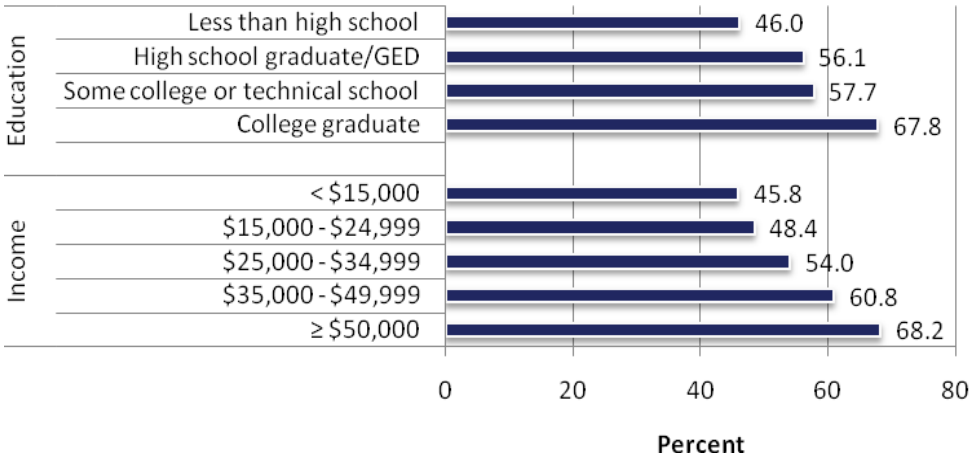
income levels increased (Figure 26). Among women aged 50 years and older, for whom mammograms are even more critical, 72.1% (95% CI: 70.3, 73.9) had a mammogram within the past 2 years. Patterns of socioeconomic differences were similar to those seen among women aged 40 years and older (Figure 26).

Figure 26. Percentage of Women Who Had a Mammogram Within the Past 2 Years.



Female BRFSS respondents were also asked if they had ever had a clinical breast exam by a health professional and if so, how long ago the last clinical exam occurred. Data are presented according the recommendations for exams provided by the American Cancer Society and Susan G. Komen for the Cure®.[32] Among women aged 20-39 years (n = 991), almost 89% had received a clinical breast exam *within the past 3 years*. Ninety-two percent of those with some college education had received a clinical exam within the past 3 years compared to 83.5% of those with less education. Also, 93.6% of women with an annual household income of at least $50,000 had received a clinical exam compared to 84.6% of those with an income of less than $25,000 yearly. Among women aged 40 years and older (n = 3,969), only 58.6% had received a clinical breast exam *within the past year*. Having had a recent clinical breast exam was more common as education and income levels increased (Figure 27).

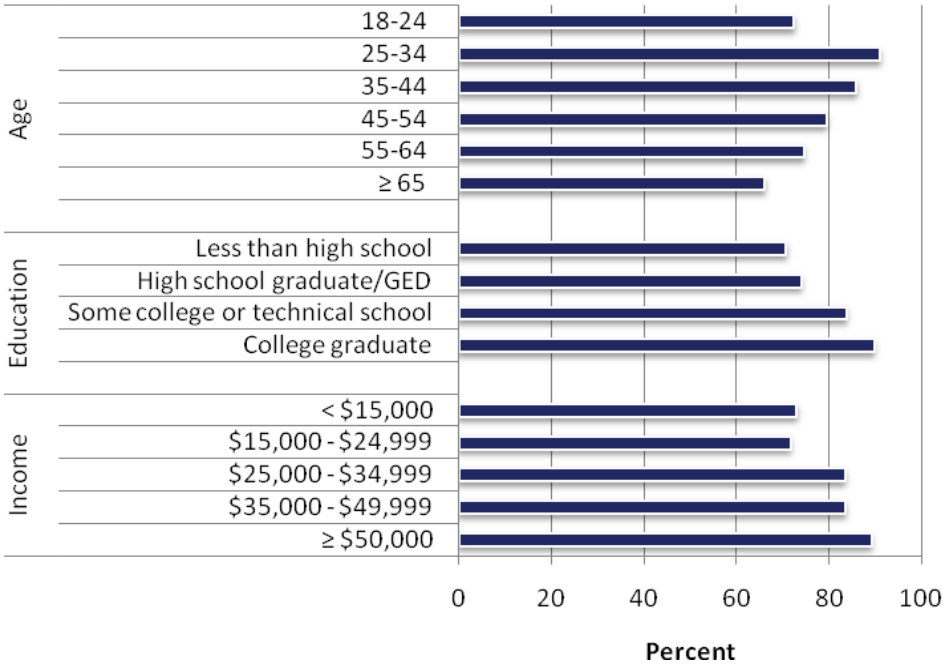
Figure 27. Percentage of Women Aged 40 Years and Older Who Had a Clinical Breast Exam Within the Past Year.



Cervical cancer. According to the CDC, cervical cancer is the easiest of the female cancers to prevent.[33] A Pap test or Pap smear looks for changes in the cells of the cervix (the lower, narrow portion of the uterus). A small sample of cells from the cervix are placed on a slide or in a bottle of liquid and sent to a laboratory for analysis. It is recommended that women get regular Pap tests beginning at the age of 21 years or within 3 years of first having sex. If by the age of 30 years a woman has had multiple Pap tests that have been normal, her doctor may tell her that she does not need another Pap test for 3 years, though regular physical exams would still be advised.[33] Women who have had their uterus completely removed may not require Pap tests.[33]

Female BRFSS respondents (n = 5,027) were asked if they had ever had a Pap test and if so, how long it had been since the last test. They were also asked if they had had a hysterectomy (if their uterus had been surgically removed). The percentage of women aged 18 years and older who had not had a hysterectomy (n = 2,991) and had received a Pap test within the past 3 years was determined. In 2008, almost 30% of Oklahoma's adult women had had a hysterectomy. Of those who still had an intact uterus, 81.0% had received a Pap test within the past 3 years. The largest percentage of women who had received a recent Pap test were those aged 25-44 years, those with more education, and those with higher income.

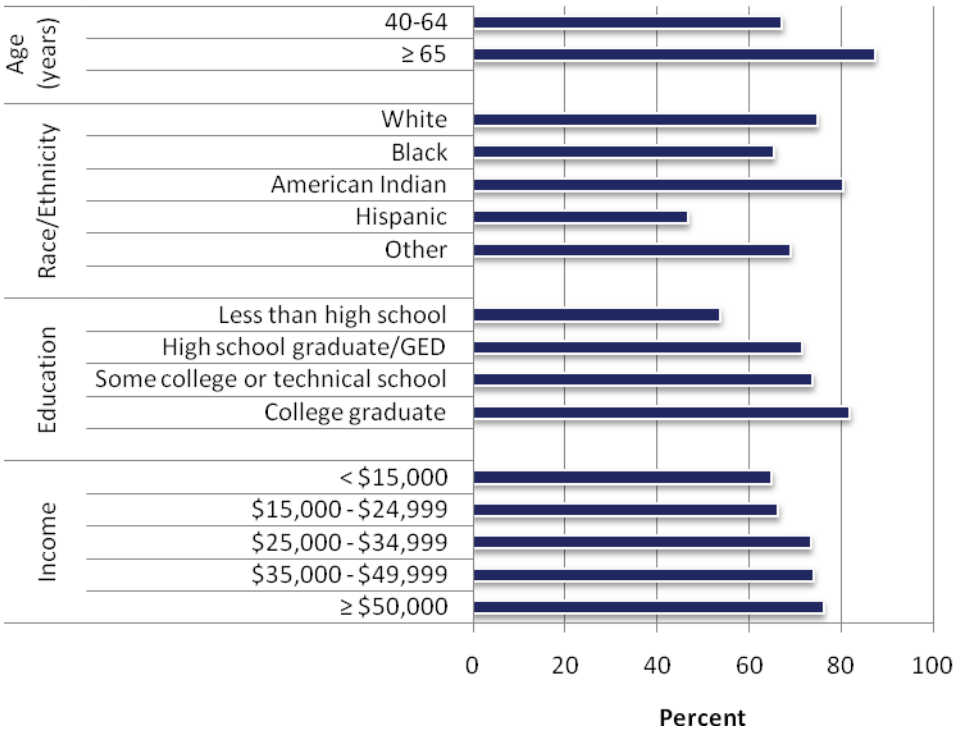
Figure 28. Percentage of Women Aged 18 Years and Older, Without a Hysterectomy, Who Had a Pap Test Within the Past 3 Years.



Prostate cancer. Prostate cancer is the most common cancer and the 2nd leading cause of cancer death among men.[30] There are two common screenings for prostate cancer: a digital rectal exam (DRE) and a prostate specific antigen test (PSA).[34] A DRE is when a health professional inserts a gloved, lubricated finger into the rectum to assess the size of the prostate and feel for lumps or other abnormalities. A PSA is a test that measures the quantity of prostate specific antigen in the blood, with elevated levels indicating a prostate problem (cancer or other condition). Although screenings help to find cancers early in some people, there is insufficient evidence that regular screenings for prostate cancer are effective at reducing risk of death.[35]

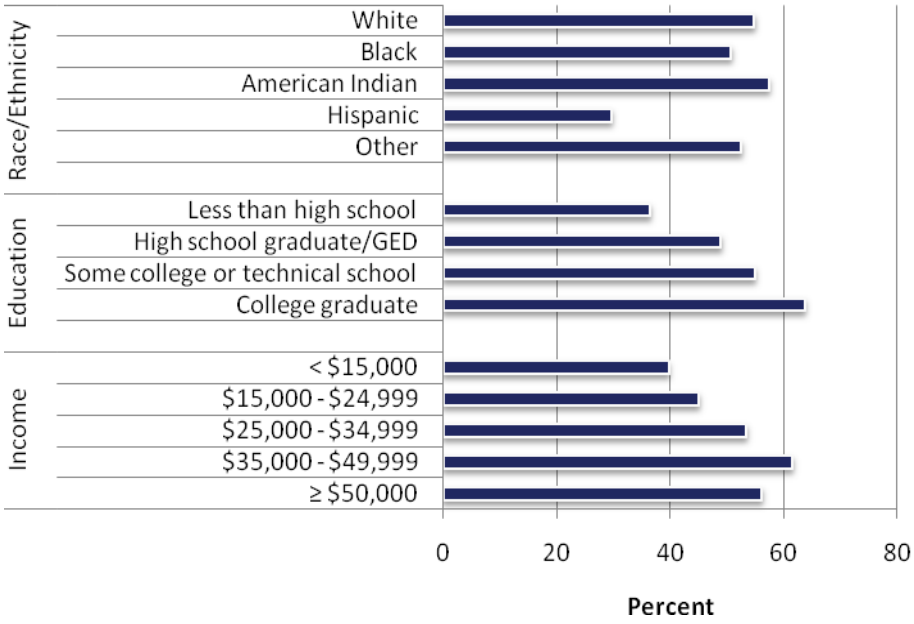
Male BRFSS respondents aged 40 years and older (n = 2,187) were asked if they had received a DRE and if so, how long it had been since their last exam. Overall, 72.8% of men aged 40 years and older had received a DRE at some point in their lives. Higher percentages of men who ever had a DRE were among seniors aged 65 years and older, college graduates, and those with a household income of $50,000 or more (Figure 29). Hispanics were much less likely to have had a DRE compared to Whites and American Indians (Figure 29). More than 62% of men had a DRE within the past 2 years, with almost 75% of seniors having had a DRE within the past 2 years compared to 56% of men aged 40 to 64 years. There were no other differences with respect to time since last DRE.

Figure 29. Percentage of Men Aged 40 Years and Older Who Ever Had a Digital Rectal Exam (DRE).



Male BRFSS respondents aged 40 years and older were also asked if they had received a PSA and if so, how long it had been since their last exam. Of men aged 40 years and older, 53.3% (95% CI: 50.8, 55.9) had a PSA test within the past 2 years. A smaller percentage of Hispanic men than Whites and American Indians had had a recent PSA test, and testing occurred less commonly among those with less education and income (Figure 30).

Figure 30. Percentage of Men Aged 40 Years and Older Who Had a PSA Test Within the Past 2 Years.



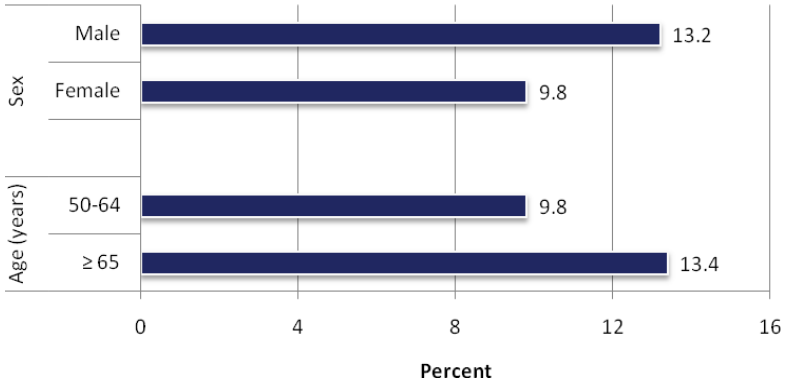
Four percent (95% CI: 3.1, 4.8) of Oklahoma's adult males aged 40 years and older had ever been told that they had prostate cancer. Prostate cancer was much more common among men aged 65 years and older (11.6%) compared to those aged 40-64 years (1.0%), and more common among Blacks (12.0%) than Whites (3.1%). There were no socioeconomic differences in the percentage of men who had ever been diagnosed with prostate cancer.

Colorectal cancer. Colorectal cancer, or cancers of the colon and rectum, comprises the third most common type of cancer and third leading cause of cancer deaths among both men and women in the United States.[30] Colorectal cancer typically develops from abnormal growths, called polyps, in the colon or rectum. Regular screening can identify and enable removal of pre-cancerous polyps and cancer that is at an early stage, thus reducing the chances of development or spread of the disease and increasing the effectiveness of treatment.[36] Regular screenings are recommended for individuals aged 50 -75 years, but may be recommended at an earlier age given the presence of other risk factors.

There are several tests that are used to screen for colorectal cancer: fecal occult blood test (FOBT), sigmoidoscopy, and colonoscopy. FOBTs, recommended annually, are home test kits whereby the individual uses a stick or brush to obtain a stool sample and then returns the test kit to their health professional or laboratory to analyze the sample for the presence of blood.[36] A sigmoidoscopy, recommended every 5 years, involves a health professional inserting a short, thin, flexible lighted tube into the rectum to look for polyps or cancer in the rectum and lower third of the colon.[36] A colonoscopy, recommended every 10 years, is similar to a sigmoidoscopy, but utilizes a longer tube to examine the entire colon.[36]

BRFSS respondents aged 50 years and older (n = 4,889) were asked if they had ever had a FOBT and if so, how long it had been since their last test. Only 11.4% (95% CI: 10.4, 12.4) of Oklahomans aged 50 years and older had a FOBT within the past year, as recommended.[36] A larger percentage of men and seniors had a FOBT within the past year compared to women and individuals aged 50-64 years, respectively (Figure 31). There were no differences in the percentage that had a FOBT within the past year by racial/ethnic or socioeconomic group.

Figure 31. Percentage of Oklahomans Aged 50 Years and Older Who Had a Fecal Occult Blood Test (FOBT) Within the Past Year.



BRFSS respondents aged 50 years and older were also asked if they had ever had a sigmoidoscopy or colonoscopy, which type of exam they have most recently, and how long it had been since their last sigmoidoscopy or colonoscopy. More than 55% of Oklahomans aged 50 years and older had ever had a sigmoidoscopy or colonoscopy. Having had a sigmoidoscopy or colonoscopy was more common among seniors and those with higher levels of education and income (Table 15). Hispanics were less likely than Whites to have had this type of screening (Table 15). Of those who had a sigmoidoscopy or colonoscopy, only 7.1% had a sigmoidoscopy for their most recent exam. Fifty-three percent of individuals who had a sigmoidoscopy as their most recent exam had the exam within the past 5 years and 96% of individuals who had a colonoscopy as their most recent exam had the exam within the past 10 years, as recommended.[36]

Table 15. Percentage of Oklahomans Aged 50 Years and Older Who Had Ever Had a Sigmoidoscopy or Colonoscopy (n = 4,889).

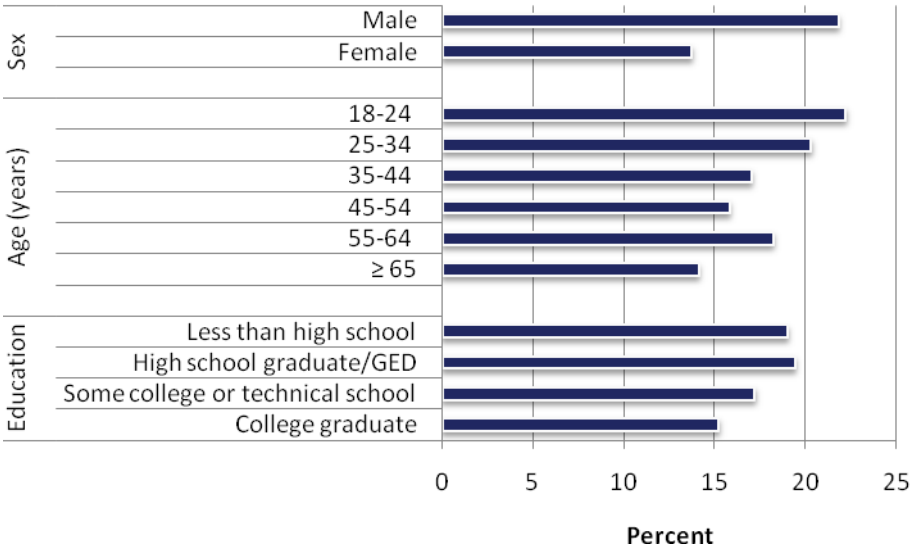
	Weighted %	95% CI
Sex		
Males	52.8	50.1, 55.6
Females	57.2	55.3, 59.2
Age (years)		
50 – 64	47.8	45.4, 50.1
≥ 65	65.0	62.8, 67.2
Race/Ethnicity		
White	56.7	54.9, 58.5
Black	54.7	47.1, 62.3
American Indian	49.0	41.3, 56.8
Hispanic	39.7	28.3, 51.1
Other	52.4	46.3, 58.6
Education		
Less than high school	41.7	37.1, 46.2
High school graduate/GED	51.8	48.9, 54.6
Some college or technical school	58.7	55.6, 61.9
College graduate	63.1	59.9, 66.2
Household Income		
< $15,000	43.1	38.5, 47.7
$15,000 - $24,999	48.0	44.2, 51.8
$25,000 - $34,999	56.1	51.5, 60.6
$35,000 - $49,999	58.6	54.3, 63.0
≥ $50,000	60.0	56.9, 63.1

Injury Prevention

Motor vehicle crashes are a leading cause of unintentional injury deaths in the United States, as well as a leading cause of nonfatal injuries that are treated in hospital emergency rooms.[13,14] Wearing a seat belt is the most effective way to reduce the large numbers of fatal and nonfatal injuries that occur in motor vehicle crashes.[37] Deterring alcohol-impaired driving (drinking and driving) is another way to reduce injuries and deaths associated with motor vehicle crashes.[38]

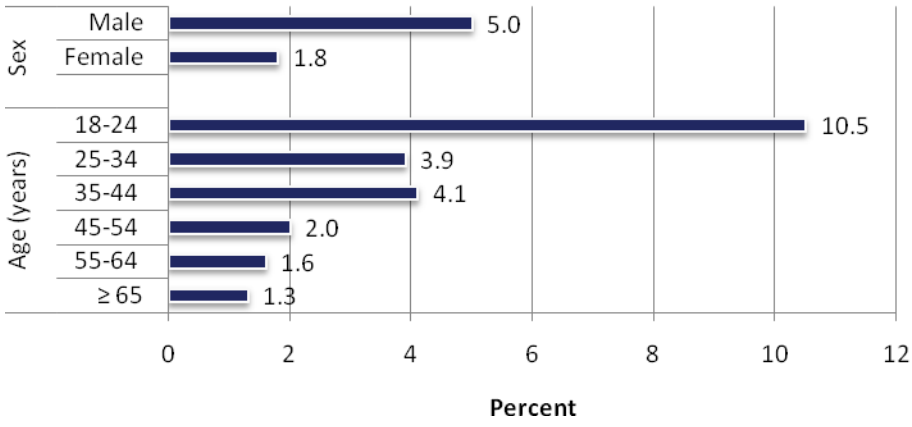
BRFSS respondents were asked how often they use seat belts when they drive or ride in a car. Responses included always, nearly always, sometimes, seldom, or never. In 2008, 82.3% of Oklahoma adults always wore a seat belt when they drove or rode in a car. This means that 17.7% did not always wear a seat belt, putting themselves at higher risk for injury or death. A larger percentage of men did not always wear a seat belt, nor did a larger percentage of young adults aged 18-34 years and adults aged 55-64 years compared to seniors over 65 years of age (Figure 32). High school graduates had a higher rate of not always using a seat belt compared to college graduates (Figure 32).There were no differences in seat belt use by race/ethnicity or income level.

Figure 32. Percentage of Oklahoma Adults Who Did Not Always Wear a Seat Belt, by Sex, Age, and Education.



BRFSS respondents who had consumed some type of alcoholic beverage within the past 30 days (n = 2,952) were asked how many times during the past 30 days they had driven when they had perhaps too much to drink. While 96.4% of Oklahoma adults had not driven after drinking alcohol within the past 30 days, 3.6% had driven while alcohol-impaired. Of those who drove while impaired, the average number of times in the past 30 days that they did so was 2.1 (95% CI: 1.5, 2.7) times. However, the range of having driven while impaired was from 1 to 25 times. Larger percentages of men and young adults aged 18-24 years had driven while alcohol-impaired (Figure 33). There were no other differences evident in the percentages of demographic groups who drove while impaired.

Figure 33. Percentage of Oklahoma Adults Who Drove While Alcohol-Impaired in the Past 30 Days.



Sleep

Obtaining sufficient quantities and quality of sleep are important factors of one's quality of life. Adults typically need 7-9 hours of sleep for optimal functioning, though some may do well with more or less sleep.[39] Getting too little sleep, or sleep deprivation, interferes with one's ability to perform usual activities and is associated with the onset of chronic conditions such as obesity and diabetes.[39] Sleep deprivation is also responsible for thousands of motor vehicle and machinery-related accidents that result in injury and disability each year.[39]

BRFSS respondents were asked how many of the past 30 days they felt they did not get enough rest or sleep. On average, Oklahoma adults experienced 9.4 (95% CI: 9.1, 9.7) days that they did not feel rested (i.e., had insufficient sleep). Of the 68.6% of Oklahomans who had at least 1 day where they did not feel rested, their average number of insufficient sleep days was 13.7 (95% CI: 13.3, 14.1) days. More than 14% of Oklahomans suffered insufficient sleep on all days.

The percentage of Oklahoma adults by number of insufficient sleep days (0, 1-29, and 30 days) are presented in Table 16. Being well rested every day (i.e., no insufficient sleep days) was most common among men, adults aged 55 years and older, Hispanics, and those with a high school education or less. Individuals with an income of $15,000-$24,999 had a higher rate of being well rested daily than most other income groups. Alternatively, never being well rested (i.e., insufficient sleep every day) was more common among adults aged 25-64 years than seniors, those without a college degree, and those in the lowest income group compared to those with an income of $35,000 or more.

Table 16. Percentage of Oklahoma Adults Who Experienced Insufficient Sleep During the Past Month.

	Number of Insufficient Sleep Days in Past 30 Days:					
	0 Days		1-29 Days		30 Days	
	Weighted %	95% CI	Weighted %	95% CI	Weighted %	95% CI
Sex						
Males	33.5	31.2, 35.8	52.7	50.2, 55.1	13.8	12.1, 15.5
Females	29.4	27.9, 30.9	55.7	54.0, 57.4	14.9	13.6, 16.2
Age (years)						
18 – 24	25.7	19.0, 32.4	61.8	54.6, 69.1	12.4	8.0, 16.8
25 – 34	21.0	17.8, 24.1	60.0	56.1, 63.8	19.1	15.9, 22.2
35 – 44	21.6	18.7, 24.6	64.7	61.3, 68.0	13.7	11.3, 16.1
45 – 54	24.7	22.2, 27.3	58.6	55.7, 61.5	16.7	14.5, 18.9
55 – 64	36.5	33.8, 39.2	50.1	47.3, 52.9	13.3	11.5, 15.2
≥ 65	58.8	56.6, 61.0	31.8	29.7, 33.9	9.4	8.0, 10.8
Race/Ethnicity						
White	30.2	28.8, 31.7	56.0	54.3, 57.6	13.8	12.6, 15.0
Black	28.3	22.9, 33.8	55.8	49.8, 61.9	15.8	11.8, 19.9
American Indian	31.8	26.4, 37.2	50.0	44.2, 55.7	18.2	13.7, 22.7
Hispanic	48.4	40.7, 56.1	38.3	31.2, 45.4	13.3	7.6, 19.0
Other	30.1	25.0, 35.3	54.5	48.5, 60.6	15.3	11.4, 19.2
Education						
Less than high school	38.3	33.6, 42.9	42.3	37.7, 46.9	19.4	15.8, 23.1
High school graduate/GED	33.5	31.1, 36.0	49.8	47.1, 52.6	16.6	14.6, 18.7
Some college or technical school	28.3	26.0, 30.7	57.1	54.4, 59.8	14.6	12.6, 16.5
College graduate	28.4	26.1, 30.8	62.6	60.1, 65.2	8.9	7.4, 10.5
Household Income						
< $15,000	29.2	25.3, 33.0	47.2	42.5, 51.9	23.6	19.8, 27.4
$15,000 - $24,999	37.2	33.7, 40.8	47.3	43.6, 51.1	15.4	12.6, 18.2
$25,000 - $34,999	33.2	29.5, 37.0	49.7	45.5, 53.9	17.1	13.9, 20.3
$35,000 - $49,999	29.2	25.9, 32.4	57.7	53.9, 61.5	13.1	10.4, 15.9
≥ $50,000	26.1	24.1, 28.2	62.1	59.8, 64.4	11.8	10.2, 13.4

Emotional Support and Life Satisfaction

The BRFSS survey included two questions regarding emotional support and life satisfaction. Respondents were asked how often they got the emotional and social support that they needed, and how satisfied they were with their lives in general. Receiving support was categorized as 1) yes, which included the responses "usually" and "always," 2) sometimes, and 3) no, which included the responses "rarely" or "never." Life satisfaction was categorized as 1) satisfied, which included the responses "satisfied" and "very satisfied," and 2) dissatisfied, which included the responses "dissatisfied" and "very dissatisfied."

Almost 81% of Oklahoma adults were receiving the emotional and social support that they needed, while 8.1% were not receiving necessary support. Whites (83.0%) were more likely than Blacks (68.1%) and

those in the "Other" category (75.0%) to have received support. The percentage of people having received support increased with higher levels of educational attainment (Figure 27) and income (Table 17). There were no differences in receipt of support by sex or age group.

Figure 34. Receipt of Emotional Support by Educational Attainment.

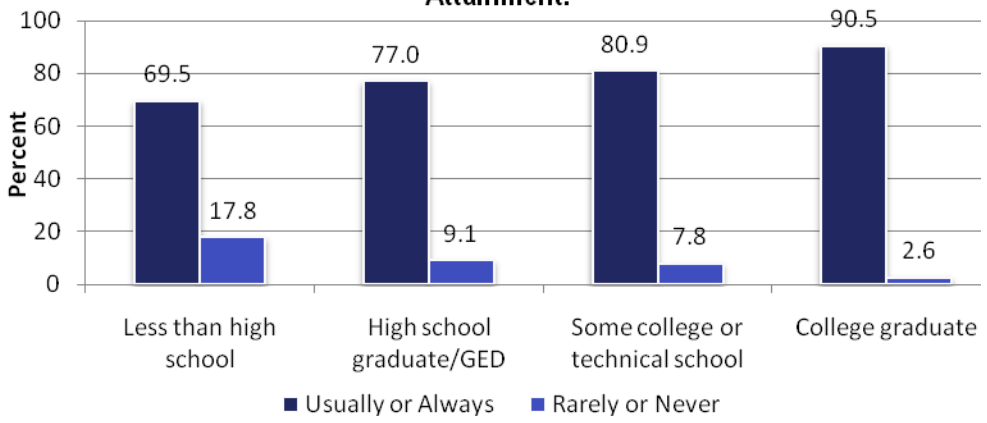


Table 17. Receipt of Emotional Support by Income Level.

	Usually or Always Received Support		Rarely or Never Received Support	
	Weighted %	95% CI	Weighted %	95% CI
Household Income				
< $15,000	60.1	55.4, 64.9	19.6	16.3, 23.0
$15,000 - $24,999	72.1	68.8, 75.5	12.4	9.8, 15.1
$25,000 - $34,999	79.8	76.3, 83.4	7.4	5.3, 9.5
$35,000 - $49,999	83.7	80.6, 86.7	6.9	4.6, 9.3
≥ $50,000	89.9	88.5, 91.4	3.0	2.1, 3.8

More than 94% of Oklahomans were generally satisfied with their lives. There were some differences in life satisfaction according to certain demographic characteristics (Table 18). A larger percentage of adults aged 65 years and older were satisfied with their lives compared to those in all other age categories. Hispanics were more satisfied with their lives than Blacks. A larger percentage of college graduates were satisfied with their lives compared to those with less education, and individuals with a household income of $50,000 or more constituted a larger group of those who were satisfied with life compared to individuals with an income of less than $35,000. Those with a household income of less than $15,000 were the least satisfied of all the income groups.

Table 18. Percentage of Oklahomans by Demographic Group Who Were Satisfied with Life.

	Generally Satisfied with Life	
	Weighted %	**95% CI**
Age (years)		
18 – 24	91.7	88.1, 95.2
25 – 34	94.2	92.4, 96.0
35 – 44	94.2	92.6, 95.7
45 – 54	93.6	92.3, 94.9
55 – 64	93.7	92.5, 95.0
≥ 65	97.0	96.3, 97.7
Race/Ethnicity		
White	94.5	93.7, 95.3
Black	90.7	87.5, 94.0
American Indian	93.7	91.0, 96.4
Hispanic	96.9	94.7, 99.0
Other	93.9	91.6, 96.2
Education		
Less than high school	91.7	89.5, 93.9
High school graduate/GED	93.6	92.3, 94.9
Some college or technical school	93.2	91.8, 94.6
College graduate	97.5	96.8, 98.2
Household Income		
< $15,000	82.3	79.0, 85.6
$15,000 - $24,999	92.5	90.7, 94.3
$25,000 - $34,999	94.3	92.4, 96.2
$35,000 - $49,999	96.8	95.5, 98.1
≥ $50,000	98.2	98.2, 98.8

Limitations

There are a number of limitations to the BRFSS data included in this report. Households that do not possess a landline telephone service, so-called cell phone only households, are excluded from the BRFSS sampling process. These cell phone only households have been shown to be of lower socioeconomic status, a group with higher risks for adverse health conditions. Individuals living in these households may have behavior patterns and health outcomes that differ from individuals residing in landline phone households. This suggests that the behavioral risks and health statuses reported in this document likely underestimate the true risks and outcomes of the Oklahoma adult population. In addition, self-reported data, like that collected in BRFSS, tend to undervalue health risk behaviors because respondents are less likely to report conduct that is illegal or that is deemed socially unacceptable in the broader society. Causation cannot be determined from these data. BRFSS data are observational and are collected at a single point in time. Evident differences between any two groups do not imply that the observed differences are caused by the single characteristic that separates the two groups. It is possible and likely that any observed differences are caused by a multiplicity of factors. Prevalence of health conditions may vary from one group to the next due to risk variation by age, education, race and ethnicity, income, and other factors, as well as due to any interaction effects afforded by a combination of these factors.

References

1. U.S. Department of Health and Human Services. *Healthy People 2010*. 2nd ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols. Washington, DC: U.S. Government Printing Office, November 2000.

2. U.S. Census Bureau (2009). *State and County QuickFacts.* Available at http://quickfacts.census.gov/qfd/states/40000.html. Accessed April 10, 2009.

3. World Health Organization. Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948.

4. Centers for Disease Control and Prevention. *Measuring Healthy Days.* Atlanta, Georgia: Centers for Disease Control and Prevention, November 2000.

5. U.S. Department of Health and Human Services (n.d.). *What Is Disability and Who is Affected by Disability.* Available at http://www.hhs.gov/od/about/fact_sheets/whatisdisability.html. Accessed April 10, 2009.

6. Centers for Disease Control and Prevention (2008). *People with Disabilities Can Lead Long, Healthy Lives.* Available at http://www.cdc.gov/Features/Disabilities/. Last updated 10/06/2008. Accessed April 13, 2009.

7. Centers for Disease Control and Prevention (2006). *Disability and Health State Chartbook 2006.* Available at http://www.cdc.gov/ncbddd/dh/chartbook/. Accessed April 13, 2009.

8. Agency for Healthcare Research and Quality (2007). *National Healthcare Disparities Report, 2003.* Rockville, MD. Available at http://www.ahrq.gov/qual/nhdr03/nhdr03.htm. Accessed April 14, 2009.

9. Centers for Disease Control and Prevention (2008). *Regular Check-Ups Are Important.* Available at http://www.cdc.gov/family/checkup/index.htm. Accessed April 24, 2009.

10. Ostchega, Y., Yoon, S. S., Hughes, J., and Louis, T. Hypertension awareness, treatment, and control – continued disparities in adults: United States, 2005-2006. NCHS data brief no. 3. Hyattsville, MD: National Center for Health Statistics. 2008.

11. Centers for Disease Control and Prevention. *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2008.

12. Health Care Information. *Oklahoma Vital Statistics, Preliminary Data.* Oklahoma City, OK: Oklahoma State Department of Health, Center for Health Statistics. 2008.

13. Centers for Disease Control and Prevention. *WISQARS Leading Causes of Deaths Report, 2006.* Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, 2006.

14. Centers for Disease Control and Prevention. *WISQARS Non-fatal Injuries: Leading Causes of Nonfatal Injuries Report, 2007*. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, 2006.

15. Centers for Disease Control and Prevention. *Hip Fractures Among Older Adults*. Available at http://www.cdc.gov/ncipc/factsheets/adulthipfx.htm. Last updated 06/10/2008. Accessed May 4, 2009.

16. Mokdad, AH, Marks, JS, Stroup, DF, Gerberding, JL. (2004). Actual causes of death in the United States, 2000. *Journal of the American Medical Association*, 291(10):1238-1245. Erratum in *JAMA* 2005, 293(3):293-294.

17. U.S. Department of Health and Human Services. *2008 Physical Activity Guidelines for Americans.* 6th Edition, Washington, DC: U.S. Government Printing Office, 2008.

18. U.S. Department of Health and Human Services. *Physical Activity and Health: A Report of the Surgeon General.* Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention. 1996.

19. U.S. Department of Health and Human Services. *Oral Health in America: A Report of the Surgeon General*. Rockville, MD: U.S. Department of Health and Human Services. 2000.

20. Centers for Disease Control and Prevention. Populations receiving optimally fluoridated public drinking water – United States, 1992-2006. *MMWR*. 2008;57(27):737-741.

21. Centers for Disease Control and prevention Fluoride Recommendations Work Group. Recommendations for using fluoride to prevent and control dental caries in the United States. *MMWR*. 2001;50(RR14):1-42.

22. Centers for Disease Control and Prevention (n.d.). *Leading Causes of Death, 1900-1998.* Available at http://www.cdc.gov/nchs/data/dvs/lead1900_98.pdf. Accessed April 10, 2009.

23. Centers for Disease Control and Prevention. *Basics and Common Questions: What Would Happen if We Stopped Vaccinations?* Available at http://www.cdc.gov/vaccines/vac-gen/whatifstop.htm. Figures and statistics last updated 2003. Accessed April 15, 2009.

24. Centers for Disease Control and Prevention. *Key Facts about Seasonal Influenza (Flu).* Available at http://www.cdc.gov/flu/keyfacts.htm. Last updated 03/12/2009. Accessed April 15, 2009.

25. Centers for Disease Control and Prevention. *Pneumococcal Disease In-Short.* Available at http://www.cdc.gov/vaccines/vpd-vac/pneumo/in-short-both.htm. Last updated 05/18/2009. Accessed May 22, 2009.

26. Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report, 2007*. Vol. 19. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. 2009. Available at http://www.cdc.gov/hiv/topics/surveillance/resources/reports/. Accessed July 21, 2009.

27. Centers for Disease Control and Prevention. *HIV and AIDS in the United States: A Picture of Today's Epidemic.* Available at http://cdc.gov/hiv/topics/surveillance/united_states.htm. Last updated 08/03/2008. Accessed July 21, 2009.

28. Oklahoma State Department of Health. *Oklahoma HIV/AIDS Fact Sheet.* Available at http://www.ok.gov/health/documents/HIV-HIV-AIDS%20Fact%20Sheet%202007.pdf. Last updated 07/2008. Accessed June 30, 2009.

29. Centers for Disease Control and Prevention. *Breast Cancer*. Available at http://www.cdc.gov/cancer/breast/. Last updated 07/06/2009. Accessed July 8, 2009.

30. U.S. Cancer Statistics Working Group. *United States Cancer Statistics: 1999–2005 Incidence and Mortality Web-based Report*. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2009. Available at: www.cdc.gov/uscs

31. Centers for Disease Control and Prevention. *Cancer Prevention and Control*. Available at http://www.cdc.gov/cancer/dcpc/prevention/screening.htm. Last updated 05/06/2009. Accessed July 8, 2009.

32. Susan G. Komen for the Cure®. Early Detection and Screening. Available at http://ww5.komen.org/breastcancer/earlydetectionampscreening.html. Accessed July 14, 2009.

33. Centers for Disease Control and Prevention. *Cervical Cancer Screening.* Available at http://www.cdc.gov/cancer/cervical/basic_info/screening/. Last updated 03/14/2008. Accessed July 14, 2009.

34. Centers for Disease Control and Prevention. *Prostate Cancer Screening.* Available at http://www.cdc.gov/cancer/prostate/basic_info/screening.htm. Last updated 06/03/2009. Accessed July 16, 2009.

35. National Cancer Institute. *Prostate Cancer Screening.* Available at http://www.cancer.gov/cancertopics/pdq/screening/prostate/Patient/page3. Last updated 06/06/2009. Accessed July 16, 2009.

36. Centers for Disease Control and Prevention. *Colorectal (Colon) Cancer*. Available at http://www.cdc.gov/cancer/colorectal/. Last updated 04/02/2009. Accessed July 20, 2009.

37. Dinh-Zarr TB, Sleet DA, Shults RA, et al. Reviews of evidence regarding interventions to increase the use of safety belts. *Am J Prev Med*. 2001;21(4S):48-65.

38. Task Force on Community Preventive Services. Motor vehicle-related injury prevention: Reducing alcohol-impaired driving. Available at http://www.thecommunityguide.org/mvoi/AID/index.html. Last updated 02/10/2009. Accessed July 21, 2009.

39. National Sleep Foundation (n.d.). *Let Sleep Work for You*. Available at http://www.sleepfoundation.org/let-sleep-work-you. Accessed June 30, 2009.

Appendix

Missing Values for Each Variable

Variable	Missing Observations	
	n	%
Demographic		
Sex	0	0.0
Age group	0	0.0
Race/ethnicity	18	0.2
Marital status	19	0.2
Education	8	0.1
Employment status	12	0.2
Annual household income	867	11.1
Health-related Quality of Life		
Self-rated health status	34	0.4
Poor physical health days	188	2.4
Poor mental health days	134	1.7
Days of limited activity due to poor physical and/or mental health	3,617	46.3
Disability		
Limited in activities because of physical, mental, or emotional problems	24	0.3
Have health problem that requires use of special equipment	3	0.0
Access to Health Care		
Health care coverage	15	0.3
Personal health care provider	8	0.2
Unable to visit doctor because could not afford cost	8	0.2
Time since last routine medical exam	191	3.3
Burden of Disease		
Been told by health professional that have had heart attack	32	0.4
Been told by health professional that have angina/CHD	83	1.1
Been told by health professional that have had stroke	31	0.4
Been told by health professional that have diabetes	11	0.1
Obesity – BMI	272	3.5
Currently have asthma	59	0.8
Falls during past 3 months[a]	76	1.3
Falls resulting in injury[b]	3	0.3
Health Behaviors/Modifiable Risk Factors		
Smoking status	23	0.3
Tried to quit smoking[c]	1	0.1
Engaged in leisure-time physical activity during past 30 days	4	0.1
Drank alcohol at least once in past 30 days	27	0.3
Heavy drinking status	133	1.7
Binge drinking status	97	1.2
Visited oral health professional in past year	34	0.4
Have had permanent teeth extracted	94	1.2

Flu vaccine within past year	58	0.7
Ever had pneumococcal vaccine	483	6.2
Ever been tested for HIV (aged 18-64 years only)[d]	208	4.0
Location of last HIV test[e]	26	1.6
Was HIV test a rapid test	-	-
Women ≥ 40 years that have had mammogram within past 2 years	71	1.8
Women ≥ 50 years that have had mammogram within past 2 years	63	2.0
Women 20-39 years that have had a clinical breast exam within past 3 years	101	10.2
Women ≥ 40 years that have had a clinical breast exam within past year	444	11.2
Women ≥ 18 years, without a hysterectomy, who had a Pap test within past 3 years	41	1.4
Men ≥ 40 years that have had a digital rectal exam within past year	568	26.0
Men ≥ 40 years that have had a PSA test within past 2 years	153	7.0
Men ≥ 40 years that have ever been told they had prostate cancer	27	1.2
≥ 50 years that had fecal occult blood test within past year	137	2.8
≥ 50 years that ever had a sigmoidoscopy or colonoscopy	92	1.9
Type of last exam, either sigmoidoscopy or colonoscopy[f]	103	3.7
Time since last sigmoidoscopy or colonoscopy[f]	52	1.9
Always wore seat belt	64	0.8
Drove after having too much to drink in past 30 days[g]	45	1.5
Number of days that got enough sleep in past 30 days	130	1.7
Emotional Support and Life Satisfaction		
Emotional support	227	2.9
Satisfaction with life	188	2.4

[a]Number of missing observations out of the 5,633 respondents aged 45 years and older. [b]Number of missing observations out of the 1,078 respondents who had a fall in the past 3 months. [c]Number of missing observations out of the 1,692 respondents who were current smokers. [d]Number of missing observations out of the 5,239 respondents aged 18-64 years. [e]Number of missing observations out of the 1,606 respondents who had an HIV test. [f]Number of missing observations out of the 2,784 respondents who had ever had a sigmoidoscopy or colonoscopy. [g]Number of missing observations out of the 2,952 respondents who drank alcohol within the past 30 days.

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