

Health Risk Behaviors of Kansans

2010 Kansas Behavioral Risk Factor Surveillance System



Kansas BRFS
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Kansas Department of Health and Environment
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Health Risk Behaviors of Kansans 2010

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**Kansas Department of Health and Environment
Bureau of Health Promotion**

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Mission

To protect and improve the health and environment of all Kansans

Vision

Healthy Kansans living in safe and sustainable environments

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BRFSS Overview

The Behavioral Risk Factor Surveillance System (BRFSS) is a random digit dial telephone survey of non-institutionalized adults age 18 years and older. In addition, adult respondents provide limited data on a randomly selected child in the household via surrogate interview. The BRFSS is coordinated and partially funded by the Centers for Disease Control and Prevention and is the largest continuously conducted telephone survey of population health risk in the world. It is conducted in every state, the District of Columbia, and several United States territories. The first BRFSS survey in Kansas was conducted as a point-in-time survey in 1990. Kansas has conducted the BRFSS survey annually since 1992.

The 2010 survey consisted of 199 questions and took an average of 25 minutes to complete. Survey topics on the 2010 Kansas BRFSS core section included: health status, healthy days, health care access, sleep, exercise, diabetes, oral health, cardiovascular disease prevalence, asthma, disability, tobacco use, demographics, alcohol consumption, immunization, falls, seatbelt use, drinking and driving, women's health, prostate cancer screening, colorectal cancer screening, HIV/AIDS, emotional support and life satisfaction. The state-added and CDC optional modules included pre-diabetes, diabetes, diabetes assessment, heart attack and stroke, tobacco indicators, oral health, anxiety and depression, depression treatment, arthritis burden, disability, inadequate sleep.

2010 BRFSS survey also included questions on emerging health issues for adults and children during the months of September through December. These modules collected information related to influenza-like illness, H1N1 vaccination, and High Risk/Health Care Worker.

The overall goal of the BRFSS is to develop and maintain the capacity for conducting population-based health risk surveys via telephone in Kansas. BRFSS data are used for the following:

- Monitoring the leading contributors to morbidity and premature death
- Tracking health status and assessing trends
- Measuring public knowledge, attitudes, and opinions
- Program planning
 - o Needs assessment
 - o Development of goals and objectives
 - o Identification of target groups
- Policy development
- Evaluation of public health programs

Data from BRFSS are weighted to account for the complex sample design and non-response bias such that the resulting estimates will be representative of the underlying population as a whole as well as for target subpopulations.

For more information about the Kansas BRFSS, including past questionnaires and data results, please visit: <http://www.kdheks.gov/brfss/index.html>



Summary of Leading Health Indicators

Healthy People 2010 are a comprehensive nationwide set of goals and objectives related to health promotion and disease prevention. In Healthy People 2010, a set of Leading Health Indicators were selected based on their relevance to broad public health topics and availability of data to measure their progress. They serve as a snapshot of the nation's progress towards improving overall health status of the population.

The 10 Leading Health Indicators are:

- Physical Activity
- Obesity
- Tobacco Use
- Substance Abuse
- Responsible Sexual Behavior
- Mental Health
- Injury and Violence
- Environmental Quality
- Immunization
- Access to Health Care

This document contains data on seven of the Leading Health Indicators, which are measurable using 2010 Kansas Behavioral Risk Factor Surveillance (BRFSS).

For more information about Healthy People 2010, please visit

<http://www.healthypeople.gov/>

For information about Healthy Kansans 2010, please visit

<http://www.healthykansans2010.org/>

For more information about Leading Health Indicators, please visit

<http://www.healthypeople.gov/LHI/>

| | Kansas Performance on the Ten Leading Health Indicators of Healthy People 2010 Measured by BRFSS | | | | | | | | | |
|---|---|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|---|
| | Kansas BRFSS 2002 | Kansas BRFSS 2003 | Kansas BRFSS 2004 | Kansas BRFSS 2005 | Kansas BRFSS 2006 | Kansas BRFSS 2007 | Kansas BRFSS 2008 | Kansas BRFSS 2009 | Kansas BRFSS 2010 | Healthy People 2010 Goal |
| <i>Physical Activity</i> | | | | | | | | | | |
| Obj. Increase the proportion of adults who engage regularly, preferably daily, in moderate physical activity for at least 30 minutes per day. | - | 38% | 37% | 38% | - | 38% | 35% | 37% | | 50% |
| <i>Overweight and Obesity</i> | | | | | | | | | | |
| Obj. Reduce the proportion of adults who are obese. | 23% | 23% | 23% | 24% | 26% | 28% | 28% | 29% | 30% | 15% |
| <i>Tobacco Use</i> | | | | | | | | | | |
| Obj. Reduce cigarette smoking by adults. | 22% | 20% | 20% | 18% | 20% | 18% | 18% | 18% | 17% | 12% |
| <i>Substance Abuse</i> | | | | | | | | | | |
| Obj. Reduce the proportion of adults engaging in binge drinking of alcoholic beverages during the past month. | 16% | 14% | 13% | 12% | 15% | 15% | 14% | 15% | 15% | 6% |
| <i>Mental Health</i> | | | | | | | | | | |
| Obj. Increase the proportion of adults with recognized depression who receives treatment. | - | - | - | - | - | - | 42% | - | 56% | 50% |
| <i>Immunization</i> | | | | | | | | | | |
| Obj. 1. Increase the proportion of non-institutionalized adults aged 65 years and older who are vaccinated annually against influenza. | 67% | 71% | 68% | 66% | 73% | 73% | 72% | 69% | 69% | 90% |
| Obj. 2. Increase the proportion of adults aged 65 years and older ever vaccinated against pneumococcal disease. | 62% | 60% | 63% | 67% | 70% | 69% | 67% | 68% | 68% | 90% |
| <i>Access to Health Care</i> | | | | | | | | | | |
| Obj. 1. Increase the proportion of persons with health insurance. | 89% | 87% | 87% | 87% | 87% | 88% | 88% | 88% | 88% | 100% |
| Obj. 2. Increase the proportion of persons who have a specific source of ongoing primary care. | 84% | 84% | 84% | 84% | 84% | 84% | 85% | 85% | 86% | 96% |

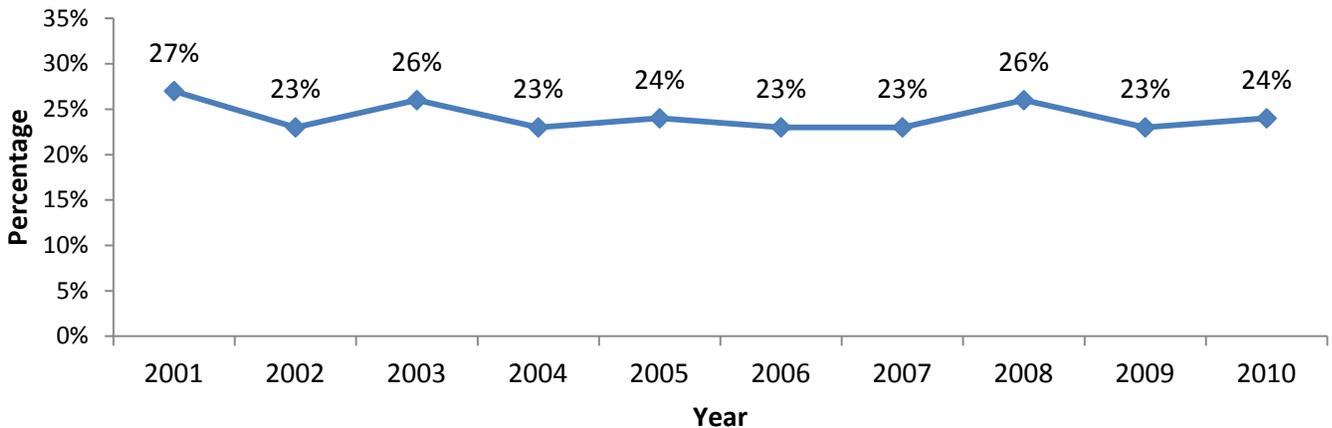
Physical Activity

Leading Health Indicator
Physical Activity
2010 Kansas BRFSS

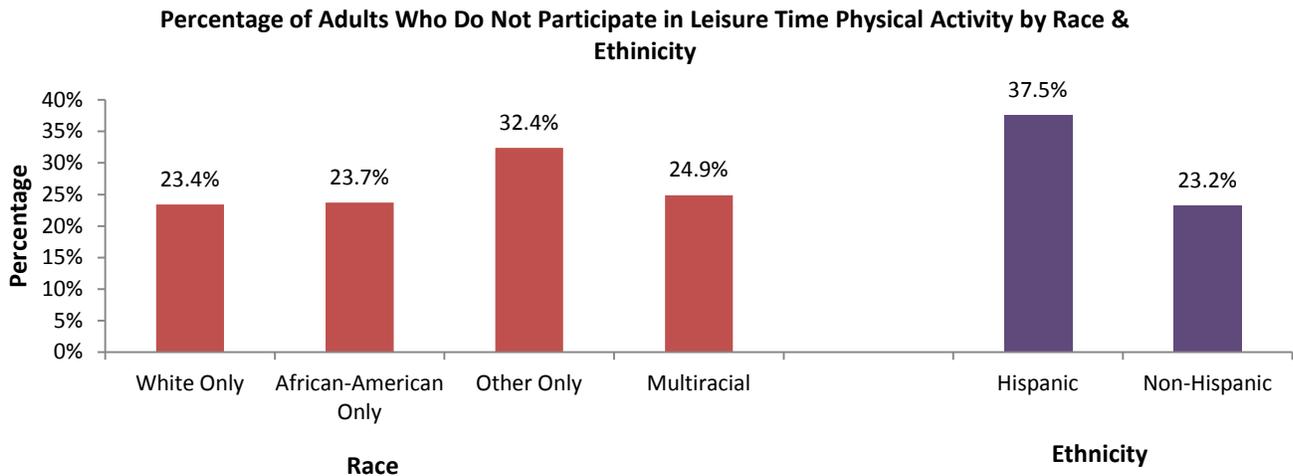
Regular physical activity can improve people’s overall health and reduce various risks for morbidity and mortality due to a sedentary lifestyle. Studies show that routine physical activity exerts enormous benefits for the prevention of chronic conditions like diabetes mellitus, cardiovascular disease, obesity, cancer, musculoskeletal diseases, and depression.¹

The 2010 BRFSS survey included a question on leisure time physical activity that assesses participation in any physical activity or exercise other than regular job such as running, calisthenics, golf, gardening, or walking for exercise. An estimated 24.0% of the adult Kansans did not participate in any leisure time physical activity. Since 2001, this percentage has slightly declined (27% (95%CI: 25.3-28.1) in 2001 vs. 24% (95%CI: 22.8-25.2) in 2010).

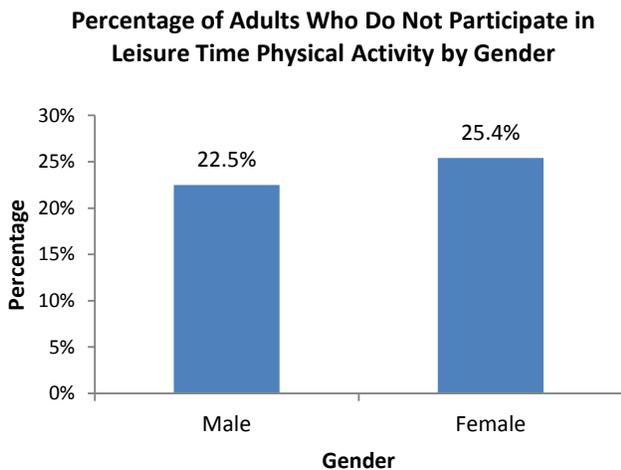
**Percentage of Adults Not Participating in Leisure Time Physical Activity, Kansas
2001-2010**



Leisure Time Physical Activity by Specific Subpopulations

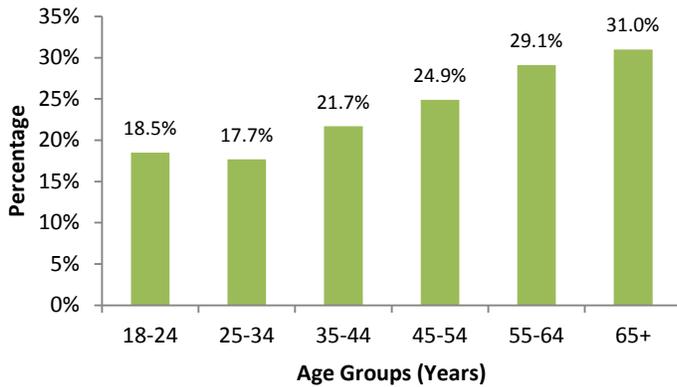


- About 23.7% of the African-American and 23.4% of the White adults do not participate in leisure time physical activity.
- Almost 37.5% of the Hispanic adults do not participate in leisure time physical activity.



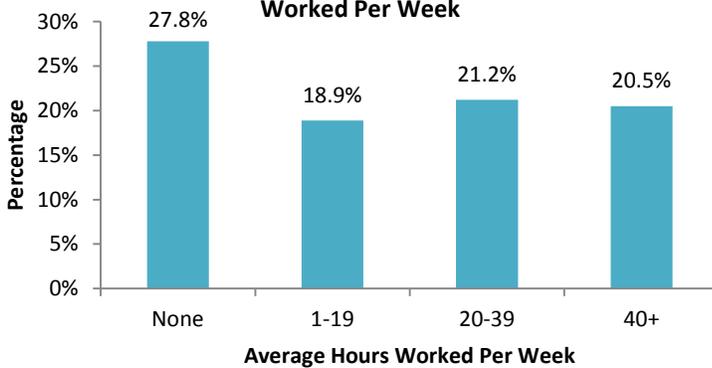
- About 1 in 4 adult males (22.5%, 95% Confidence Interval (CI): 20.7-24.4) and 1 in 4 females (25.4%, 95% Confidence Interval (CI): 23.8-26.9), does not participate in leisure time physical activity.
- Percentage of adults not participating in leisure time activity does not vary statistically by gender.

Percentage of Adults Who Do not Participate in Leisure Time Physical Activity by Age



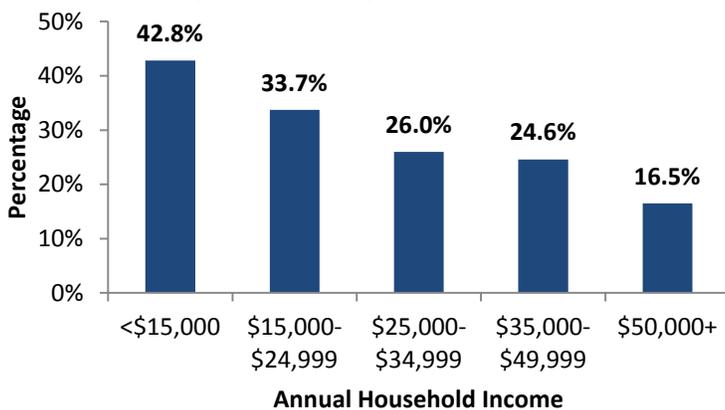
- Almost 1 in 3 adults age 65 years and older (31.0%) does not participate in leisure time physical activity.
- Percentage of adults not participating in leisure time physical activity is significantly higher for older adults (55-64 years: 29.1%, 95% CI: 26.9-31.2; 65+ years: 31.0%, 95% CI: 29.2-32.9) as compared to younger adults (18-24 years: 18.5%, 95% CI: 13.0-24.0; 25-34 years: 17.7%, 95% CI: 14.4-21.0)

Percentage of Adults Who Do Not Participate in Leisure Time Physical Activity by Average Hours Worked Per Week



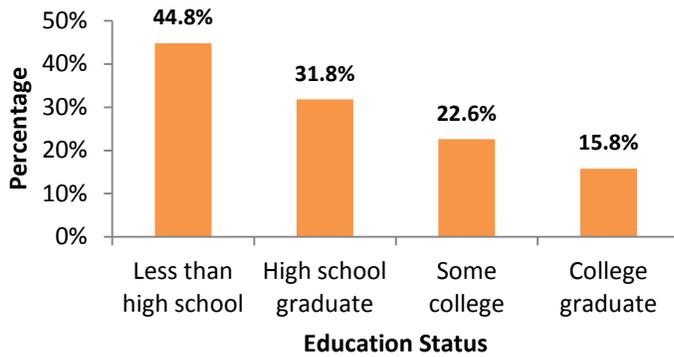
- Among adults who do not work any hours per week at a job or business, 28.0% do not participate in leisure time physical activity.

Percentage of Adults Who Do Not Participate in Leisure Time Physical Activity by Annual Household Income



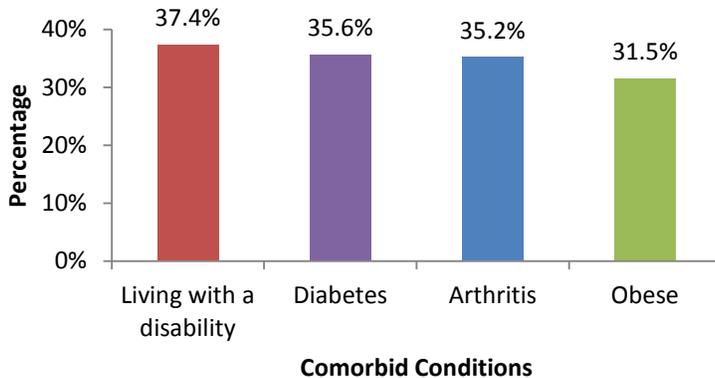
- Percentage of adults not participating in leisure time physical activity is high among adults with a lower annual household income.
- About 2 in 5 adults (42.8%) with an annual household income less than \$15,000 do not participate in leisure time physical activity.

Percentage of Adults Who Do Not Participate in Leisure Time Physical Activity by Education Status



- About 3 in 7 adults with less than high school education (44.8%) do not participate in leisure time physical activity.
- The percentage of adults not participating in leisure time activity is higher among those with less than high school education (44.8%, 95% CI: 38.9-50.7) as compared to those with college or more education (15.8%, 95% CI: 14.1-17.4).

Percentage of Adults Who Do Not Participate in Leisure Time Physical Activity by Comorbid Conditions



- Percentage of non-participation in leisure time physical activity is high among adults with co-morbid condition.
- More than 1 in 3 adults living with a disability (37.4%) or having diabetes (35.6%) does not participate in leisure time physical activity.
- About 1 in 3 adults with arthritis (35.2%), or obesity (31.5%) does not participate in leisure time physical activity.

Summary

About one-fourth (24.0%) of the adult Kansans do not participate in any leisure time physical activity. This trend has remained unchanged over the past few years. The percentage of non-participation in leisure time physical activity was highest among 65 years and older adults (31.0%). Percentage of non-participation in leisure time physical activity is higher among adults with a low annual household income and education status. Higher percentage of non-participation in leisure time physical activity is seen among people with other chronic conditions, such as disability and diabetes. A higher percentage of non-participation in leisure time physical activity is seen among Hispanics and adults who do not work.

Obesity

Leading Health Indicator

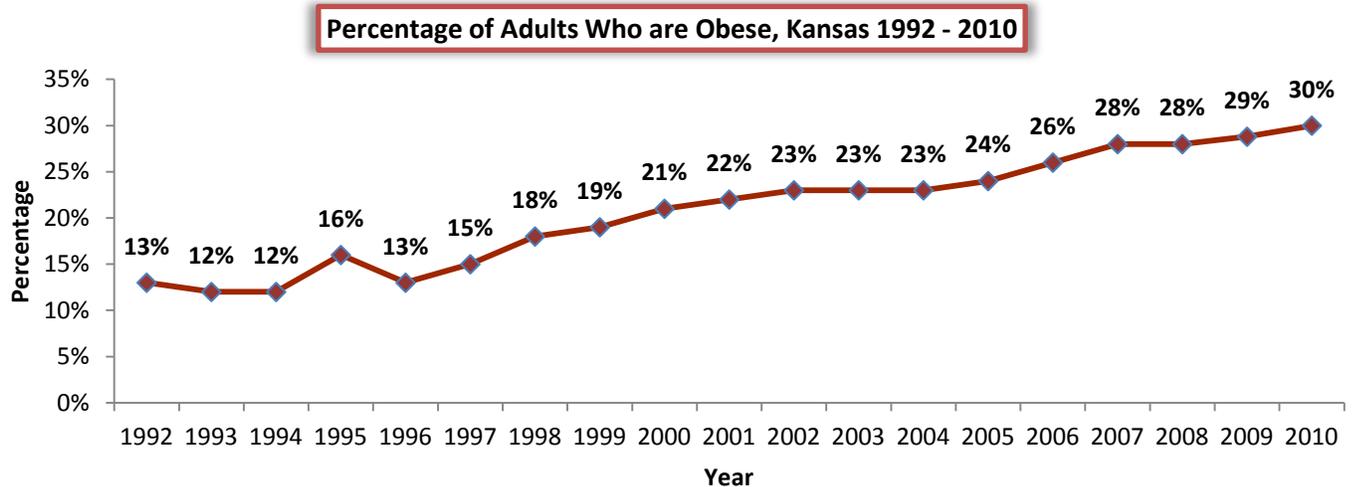
Obesity

2010 Kansas BRFSS

Population assessment of obesity is done by calculating Body Mass Index (BMI). Categories of BMI indicate ranges of body weight.² Obesity has physical, psychological, and social consequences in adults.⁵ Health risks of obesity includes coronary heart disease, stroke, hypertension, dyslipidemia, arthritis and type-2 diabetes.^{3,4} Apart from physical ailments, people suffering from obesity also face psychological problems including depression, appearance consciousness, and lack of selfconfidence.⁵

BMI Categories

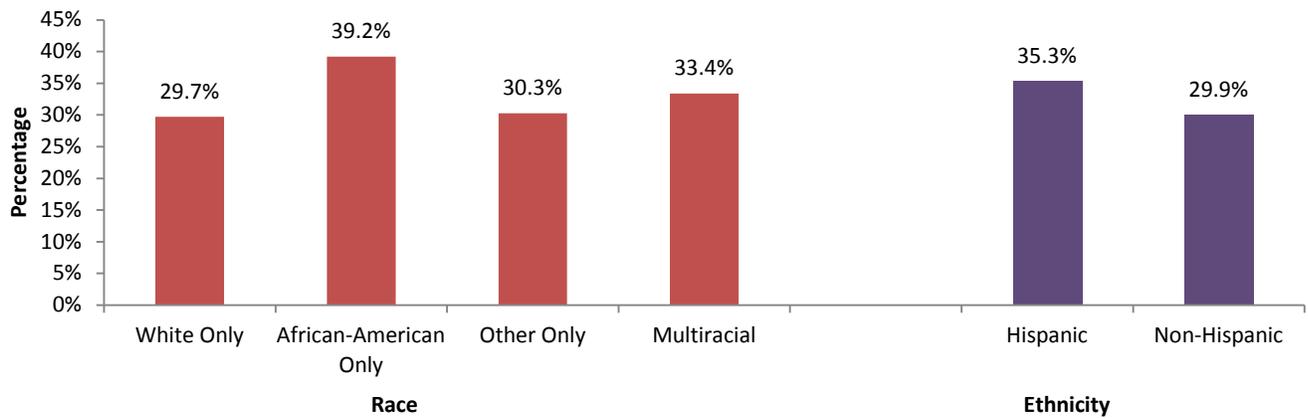
- **Normal/Underweight:** BMI less than 25 kg/m²
- **Overweight:** BMI 25 kg/m² to 29.9 kg/m²
- **Obese:** BMI equal to or more than 30 kg/m²



The Kansas BRFSS survey included questions about respondents' height and weight; categories of weight status were calculated for each respondent. The prevalence of obesity in Kansas has increased consistently over the past two decades. From 16% (95% C.I: 14.1-17.7) in 1995, it has reached 30% (95% C.I: 28.8-31.5) in 2010, representing an obesity prevalence that has almost doubled in the past 15 years.

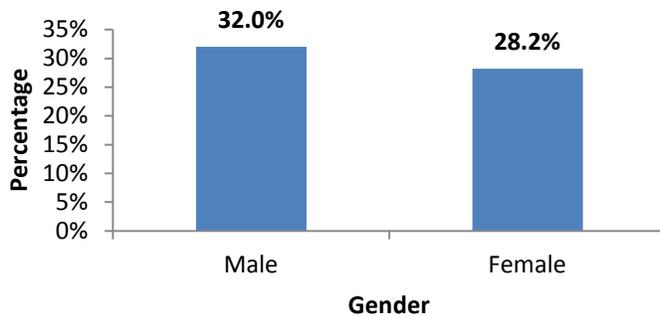
Obesity by Specific Subpopulations

Prevalence of Obesity by Race and Ethnicity



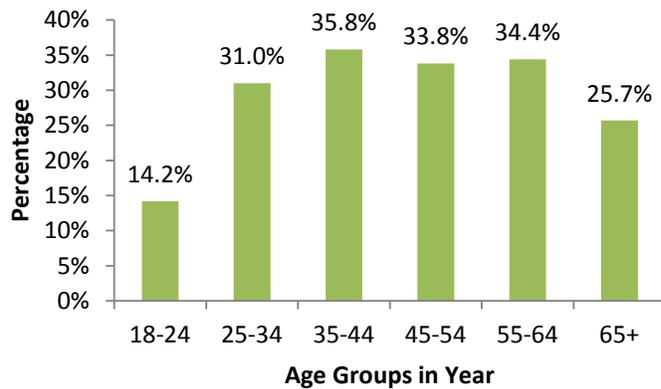
- Prevalence of obesity was significantly higher among African-Americans (39.2%, 95% CI: 32.2-46.2) as compared to Whites (29.7%, 95% CI: 28.2-31.1).
- About 1 in 3 (35.3%, 95% CI: 27.9-31.3) Hispanic adults and 1 in 4 (29.9%, 95% CI: 28.5-31.3) Non-Hispanic adults are obese.

Prevalence of Obesity by Gender



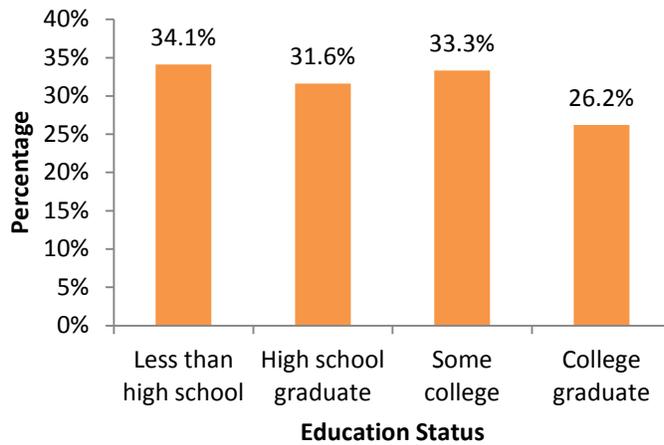
- About, 32.0% (95% CI: 29.8-34.2) of males and 28.2% (95% CI: 26.6-29.8) of females are obese.

Prevalence of Obesity by Age Groups



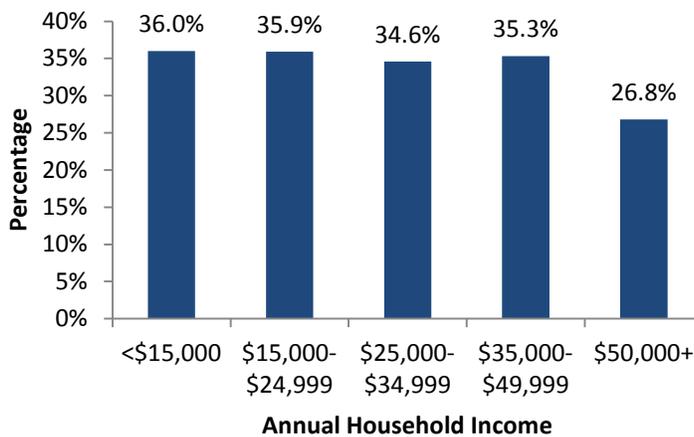
- About 1 in 3 adults among age groups 35-44 years, 45-54 years and 55-64 years are obese.
- 1 in 4 adults (25.7%) ages 65 years and older is obese.

Prevalence of Obesity by Education Status



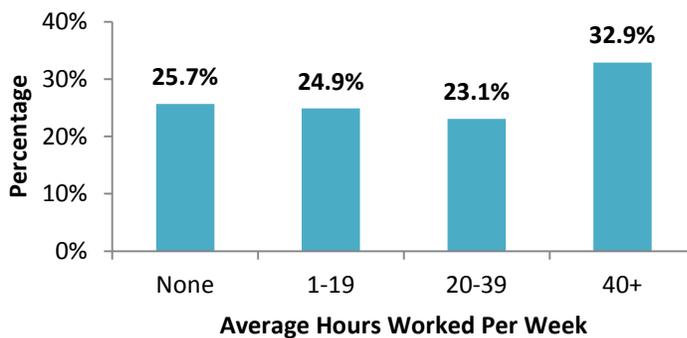
■ Adults with High school graduate education (31.6%, 95% CI: 28.9-34.4); and some college education (33.3%, 95% CI: 30.6-36.0) have significantly higher prevalence of obesity as compared to college or higher level education (26.2%, 95% CI: 24.2-28.1).

Prevalence of Obesity by Annual Household Income

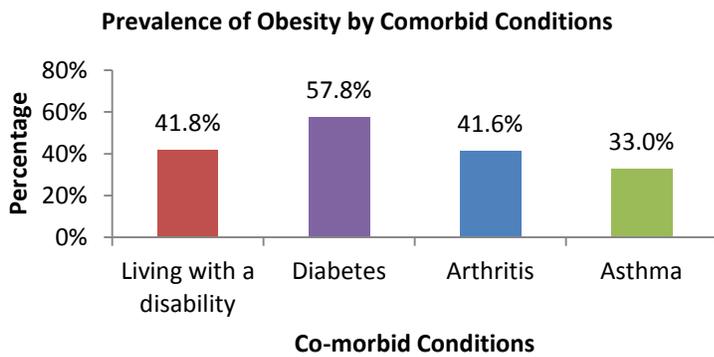


■ Adults with an annual household income of \$50,000 or more (26.8%, 95% CI: 24.9-28.7) have significantly lower prevalence of obesity as compared to other income status categories (less than \$15,000: 36.0%, 95% CI: 30.0-42.1; \$15,000-\$24,999: 35.9%, 95% CI: 31.6-40.2; \$25,000-\$34,999: 34.6%, 95% CI: 30.3-39.0; and \$35,000-\$49,999: 35.3%, 95% CI: 31.5-39.1)

Prevalence of Obesity by Average Hours Worked



■ About 1 in 3 adults (32.9%) who worked 40 or more hours per week at a job or business is obese.



- About half of the adults with diabetes (57.8%) are obese.
- About 2 in 5 adults living with disability or arthritis are obese.
- Obesity is highly prevalent among adults with chronic conditions.

Summary

In Kansas, prevalence of obesity has constantly accelerated over the last 18 years. Currently, about one-third of the population is obese. Although high prevalence of obesity is seen among most of the population subgroups, it is significantly higher among African-Americans. Adults whose annual household income is less than \$50,000 and adults who have other chronic conditions such as diabetes, arthritis or living with a disability also have high prevalence of obesity. Adults who work 40 hours or more per week have higher prevalence of obesity as compared to adults who do not work or worked less than 40 hours.

The Healthy People 2010 target for the obesity objective was to reduce the proportion of adults who are obese to 15%. As 30% of adults in Kansas are obese, further public health efforts are needed to reach the target in Kansas.

Tobacco Use

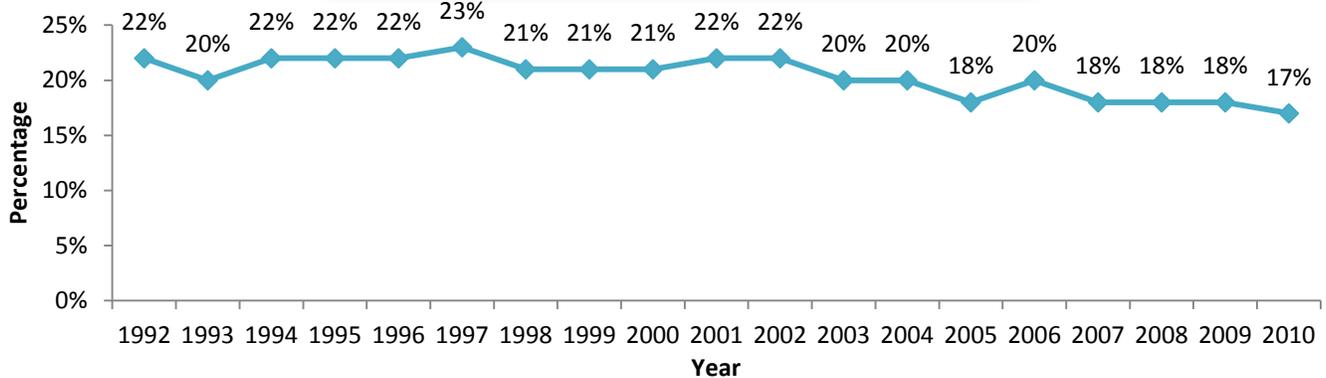
Leading Health Indicator

Tobacco Use

2010 Kansas BRFSS

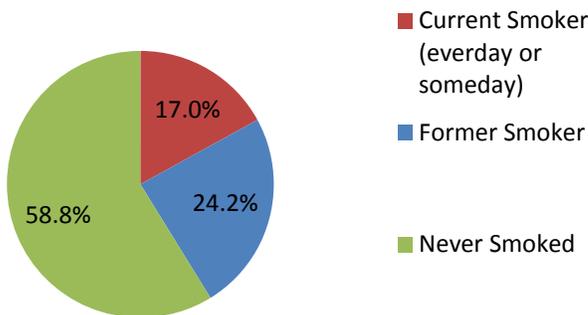
Tobacco use is one of the most preventable causes of morbidity and mortality.⁶ More deaths are caused each year by tobacco use than by all deaths from human immunodeficiency virus (HIV), illegal drug use, alcohol use, motor vehicle injuries, suicides, and homicides combined.^{7,8} Reducing the prevalence of cigarette smoking is one of the most important public health goals because of the strong association of tobacco use with diseases and premature mortality.⁹ At present, nearly 40 diseases or causes of death are known to be positively associated with cigarette smoking.¹⁰ Smoking causes many types of cancers including lung cancer, coronary heart disease, stroke, peripheral vascular disease, emphysema, bronchitis, chronic airway obstruction etc.¹¹ Cigarette smoking has many adverse reproductive and early childhood effects, including increased risk for infertility, stillbirth, and low birth weight.¹¹

Percentage of Current Smokers, Kansas 1992 - 2010



2010 BRFSS data defines current smokers as adults who have smoked 100 cigarettes in their entire life and they smoke now, either everyday or some days.

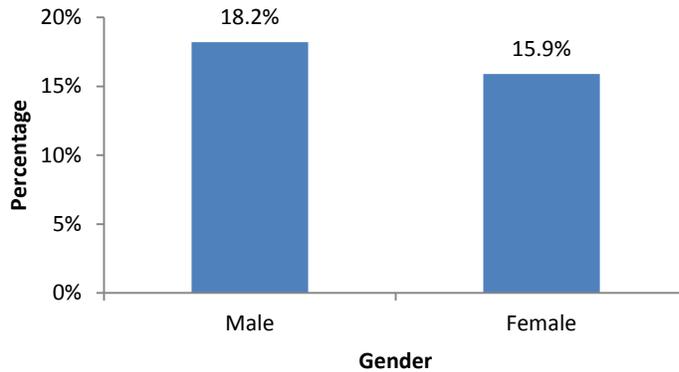
Percentage of Adults by Smoking Status



- About 1 in 6 adults (17.0%) currently smokes cigarettes.
- About 1 in 4 adults (24.2%) is a former smoker.
- About 60% of adults have never smoked.
- More than half of current smokers (56.8%) tried to quit smoking for one day or longer in the past year.

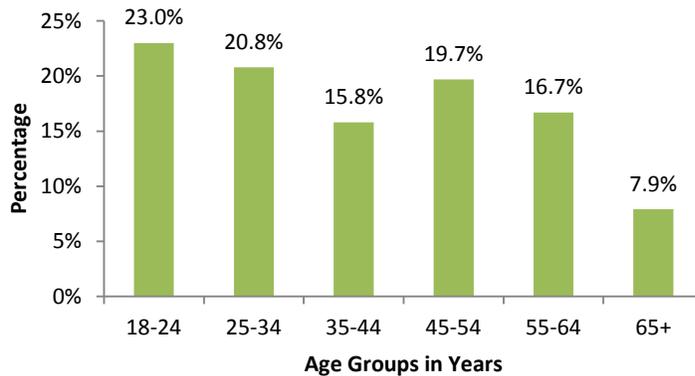
Current Smoking by Specific Subpopulations

Prevalence of Current Smoking by Gender



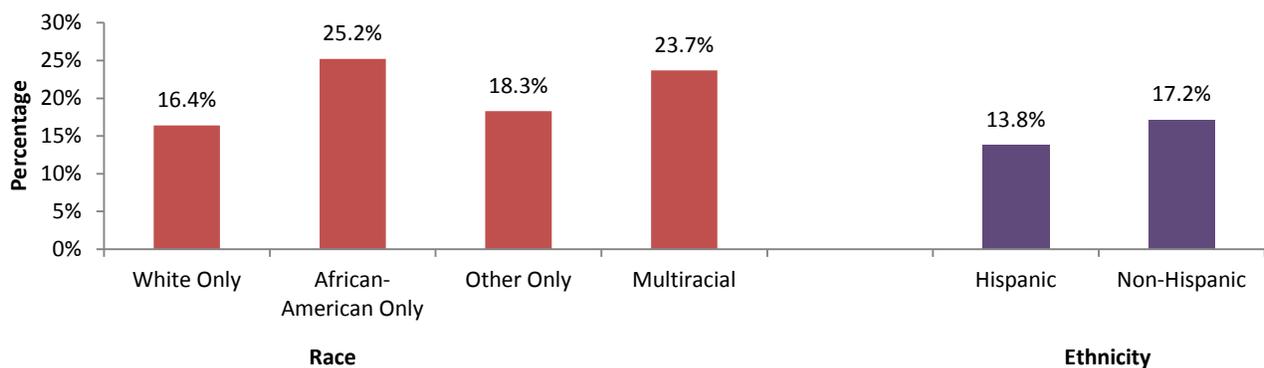
- About 1 in 6 adult males (18.2%, 95% CI: 16.2-20.1) and females (15.9%, 95% CI: 14.5-17.2) currently smokes cigarettes.
- The prevalence of current smoking does not vary significantly between males and females.

Prevalence of Current Smoking by Age Groups



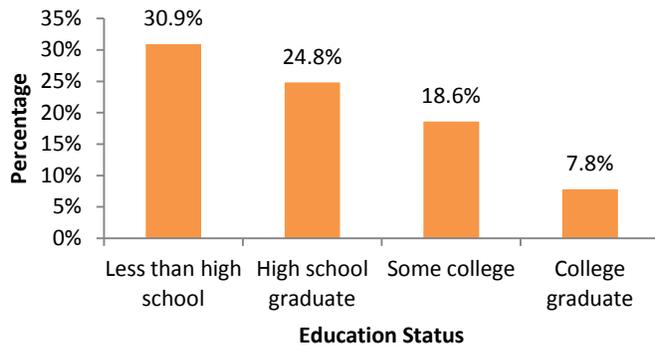
- About 1 in 4 adults aged 25-34 years currently smokes cigarettes.
- Prevalence of current smoking is higher among adults of younger age groups (18-24 years: 23.0%, 95% CI: 16.5-29.5; 25-34 years: 20.8%, 95% CI: 17.3-24.3) as compared to prevalence of current smoking among adults 65 years and older (7.9%, 95% CI: 6.8-8.9).

Prevalence of Current Smoking by Race and Ethnicity



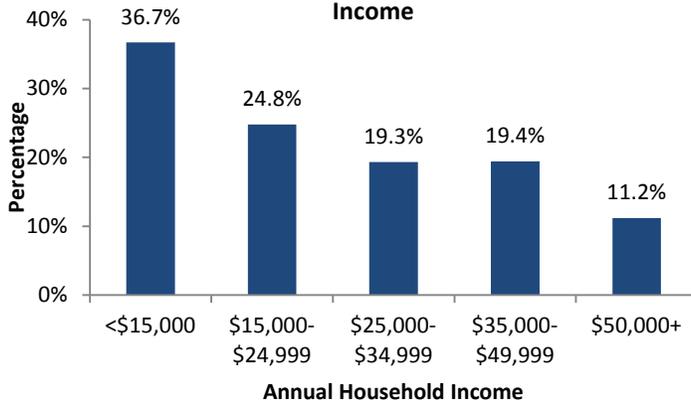
- About 1 in 4 African Americans (25.2%, 95% CI: 18.8-31.5) smoke cigarettes.
- One in seven Hispanics and 1 in 6 non-Hispanics currently smokes cigarettes.

Prevalence of Current Smoking by Education Status



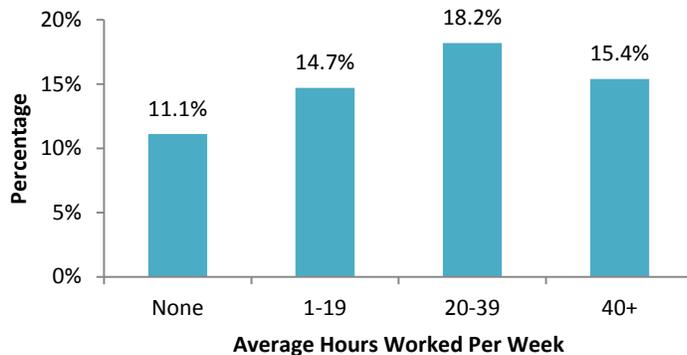
- About 30.9% (95% CI: 25.0-36.8) of adults with less than high school education currently smoke cigarettes.
- About 7.8% (95% CI: 6.5-9.1) of adults with college or higher education currently smokes cigarettes.
- Prevalence of current smoking is significantly higher among adults with less than high school education as compared to those with more education.

Prevalence of Current Smoking by Annual Household Income

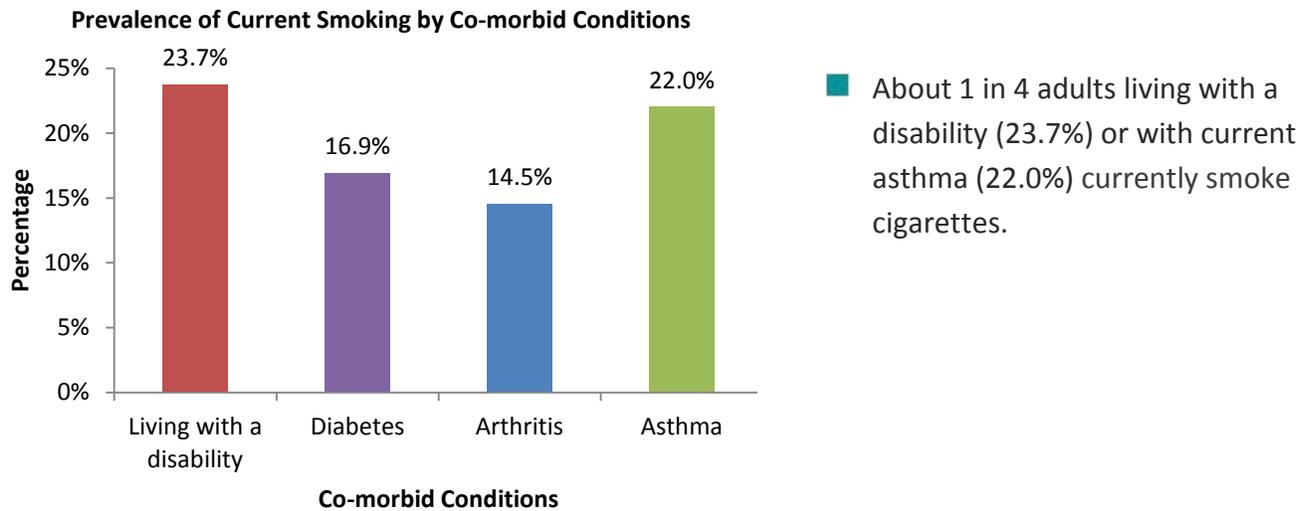


- Prevalence of current smoking is high among the lower income population.
- About 1 in 3 adults (36.7%, 95% CI: 30.2-43.2) whose annual household income is less than \$15,000 currently smoke as compared to 11.2% (95% CI: 9.8-12.7) of adults whose annual household income is equal to or more than \$50,000.

Prevalence of Current Smoking by Average Hours Worked Per Week



- About 1 in 6 adults who work 20-39 hours or at least 40 hours per week currently smokes cigarettes (20-39 hours/week: 18.2%, 95% CI: 14.5-21.8; 40+ hours/week: 15.4%, 95% CI: 13.7-17.0).



Summary

The prevalence of current smoking is 17.0%. A slow decline in smoking prevalence that began in 2002 has plateaued in recent years. The prevalence of current smoking is higher among young and middle-aged adults. The prevalence is also higher among adults with a lower education status and a lower annual household income. About 57.0% of current smokers have tried to quit smoking for one day or longer in the past year.

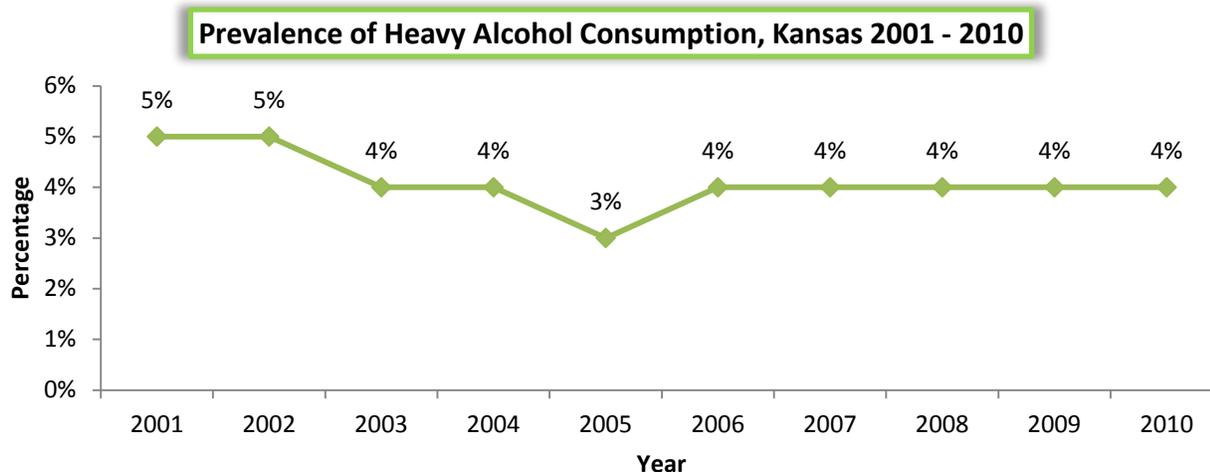
The Healthy People 2010 target for the tobacco use objective was to reduce cigarette smoking among adults to 12%. As 17% of adults in Kansas are current cigarette smokers, further public health efforts are needed to reach the target in Kansas.

Substance Abuse: Alcohol

Alcohol consumption is the third leading preventable cause of death in the United States.¹² Alcohol abuse is generally measured by two types of alcohol consumption patterns: binge and heavy drinking. Binge drinking is associated with alcohol poisoning, unintentional injuries, suicide, hypertension, pancreatitis, sexually transmitted diseases, and meningitis, among other disorders. The National Institute on Alcohol Abuse and Alcoholism reported that binge drinking underlies many negative social costs, including interpersonal violence, drunk driving, and lost economic productivity.¹⁴ Heavy alcohol drinking has a pervasive and potentially detrimental effect on the body especially on its liver and pancreas. Heavy drinking has been associated with a number of adverse effects on the cardiovascular system, significant increases in blood pressure, and non-cardiac myopathy.¹⁵ Heavy drinking is associated with a number of chronic health conditions, including chronic liver disease and cirrhosis, gastrointestinal cancers, heart disease, stroke, pancreatitis, depression, as well as a variety of social problems.¹⁴

Types of alcohol consumption include chronic (heavy) and acute (binge) drinking.

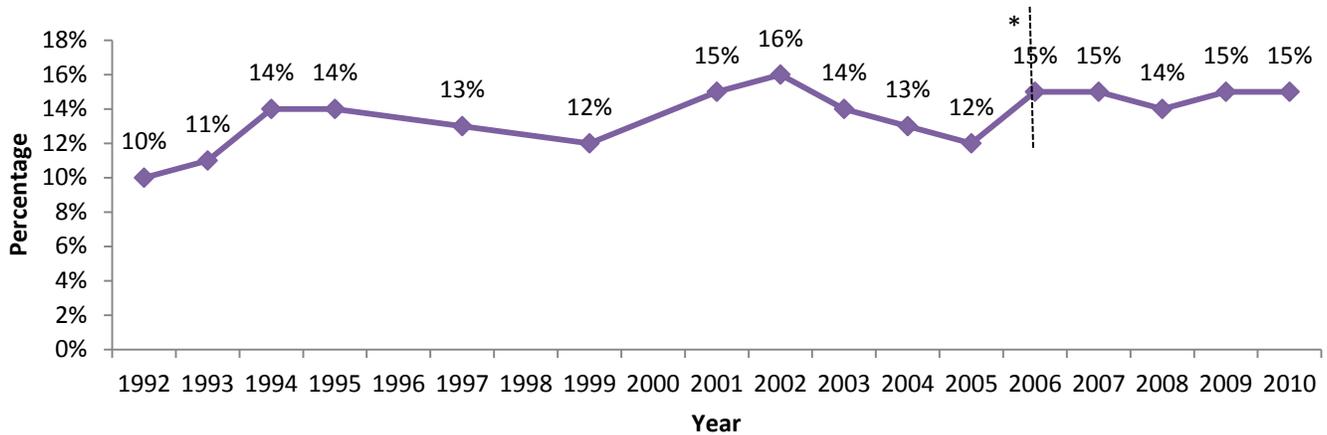
Heavy Alcohol Consumption: Heavy alcohol consumption is defined as adult men having more than two drinks per day and adult women having more than one drink per day in past 30 days.



- The current prevalence of heavy alcohol consumption is 4%. The prevalence of heavy drinking remained consistent over the past decade (5% (95%CI: 4.0-5.6) in 2001 vs. 4% (95%CI: 3.2-4.4) in 2010).

Binge Drinking: Binge drinking is defined as adult males having five or more drinks on one occasion and adult females having four or more drinks on one occasion in past 30 days.

Prevalence of Binge Drinking, Kansas 1992 - 2010

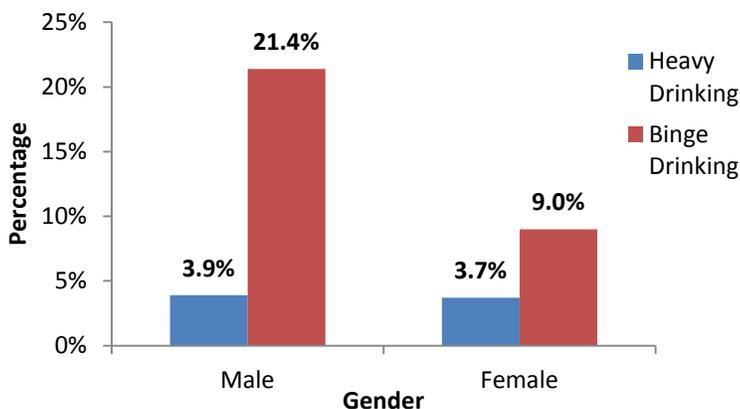


* Note: The definition of binge drinking changed in 2006 to males having five or more drinks on one occasion in the past month, and females having four or more drinks on one occasion in the past month. The previous definition was consumption of five or more drinks on at least one occasion in the past month, without regard to gender.

- The current prevalence of binge drinking is 15%. The prevalence of binge drinking has remained relatively stable since 2006 (15% (95%CI: 14.2-16.6) in 2006 vs. 15% (95%CI: 13.8-16.3) in 2010).

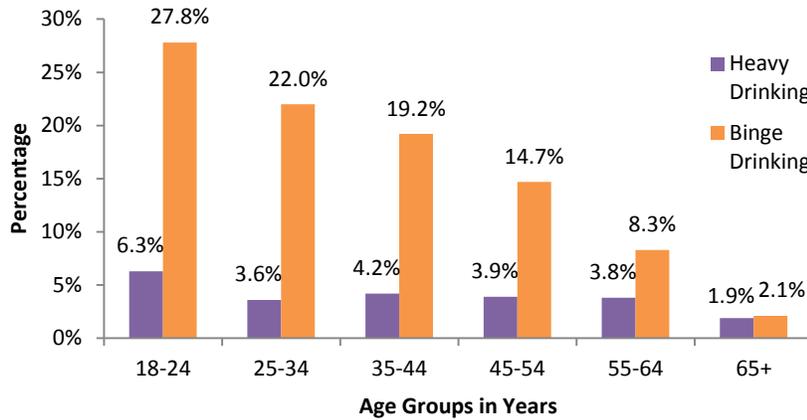
Heavy Alcohol Consumption and Binge Drinking by Specific Subpopulations

Heavy Drinking and Binge Drinking by Gender



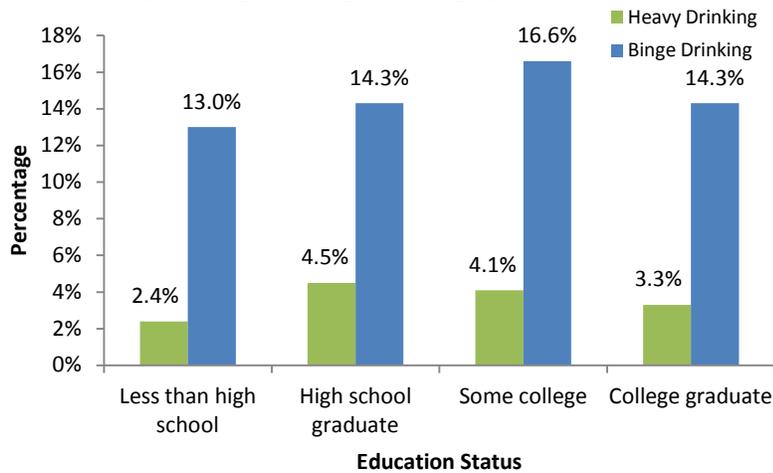
- The prevalence of binge drinking among males is 21.4% (95% CI: 19.3-21.6) and the prevalence of heavy drinking among males is 3.9% (95% CI: 3.0-4.8).
- The prevalence of binge drinking among females is 9.0% (95% CI: 7.8-10.2) and the prevalence of heavy drinking among females is 3.7% (95% CI: 2.9-4.5).
- A significantly higher percentage of males are binge drinkers than females.

Heavy Drinking and Binge Drinking by Age Groups



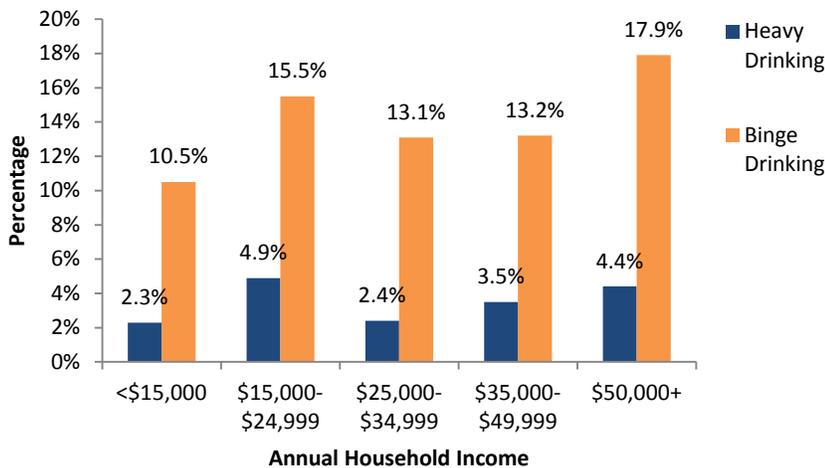
- About 1 in 20 adults (6.3%) 18-24 years engages in heavy drinking.
- About 1 in 4 adults (27.8%) 18-24 years engages in binge drinking.

Heavy Drinking and Binge Drinking by Education Status



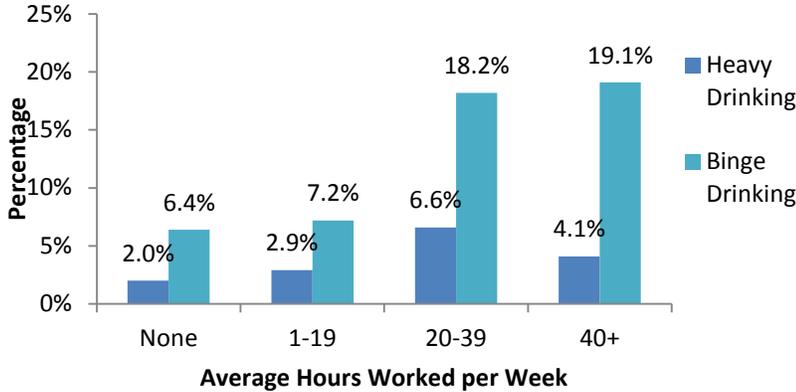
- About 1 in 25 adults (4.1%, 95% CI: 2.9-5.3) with some college education engages in heavy drinking.
- About 1 in 6 adults (16.6%, 95% CI: 14.0-19.2) with some college education reported engage in binge drinking.

Heavy Drinking and Binge drinking by Annual Household Income



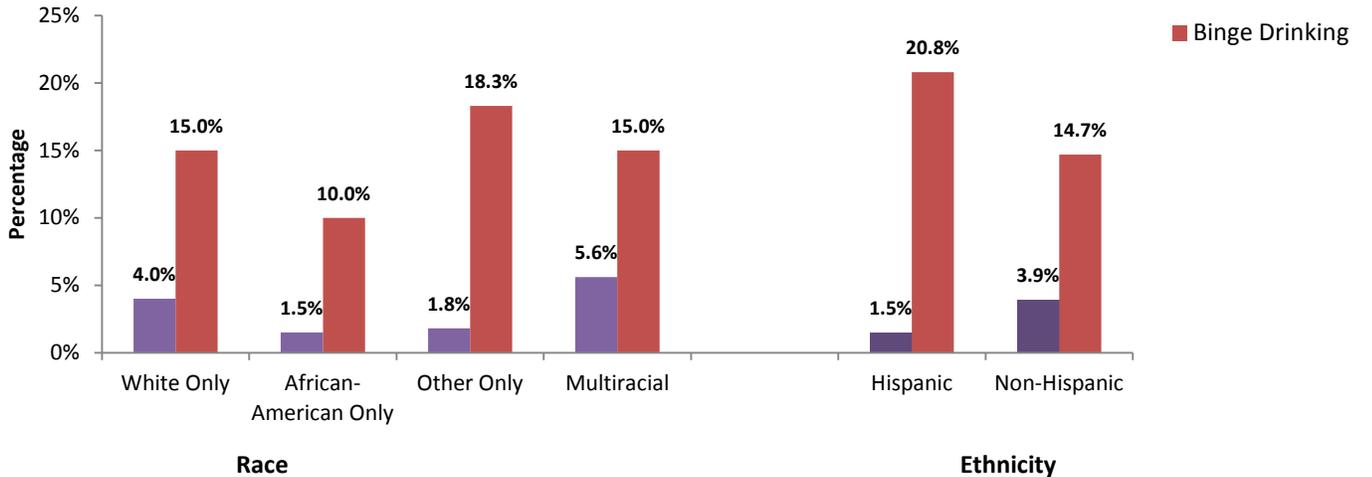
- About 1 in 20 adults (4.4%, 95% CI: 3.4-5.3) with an annual household income of \$50,000 or more engages in heavy drinking.
- About 1 in 6 adults (17.9%, 95% CI: 16.1-19.8) with an annual household income engage in binge drinking.

Heavy Drinking and Binge Drinking by Average Hours Worked per Week



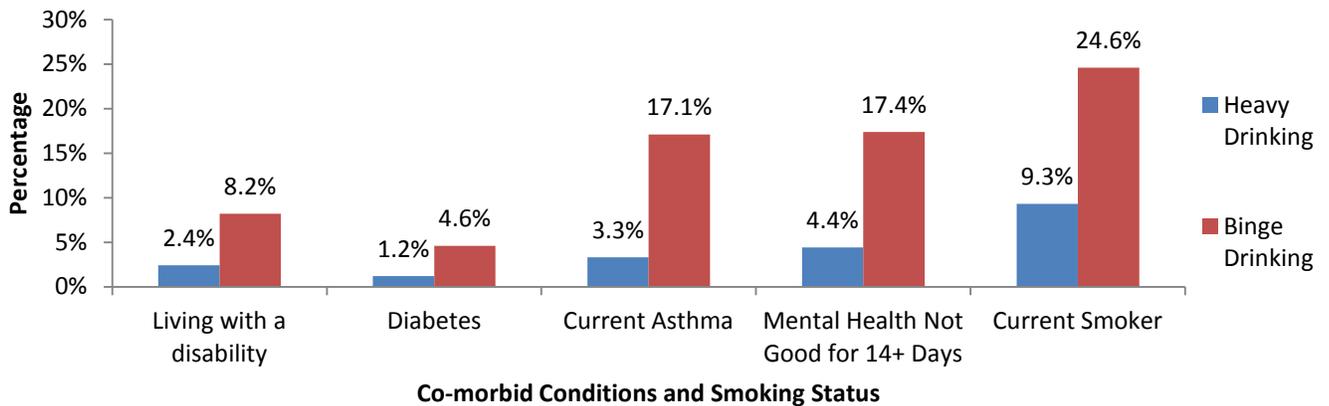
- The prevalence of binge drinking among adults who worked 40 hours or more per week is 19.1%, (95% CI: 17.2-21.1) and the prevalence of heavy drinking is 4.1%, (95% CI: 3.2-4.9).
- The prevalence of binge drinking among adults who worked 20-39 hours or more per week is 18.2%, (95% CI: 14.4-22.1) and the prevalence of heavy drinking is 6.6%, (95% CI: 4.2-9.0).

Heavy Drinking and Binge Drinking by Race & Ethnicity



- About 1 in 7 White adults (15.0%) and 1 in 5 Hispanic adults (20.8%) engage in binge drinking.
- About 1 in 25 White adults (4.0%) and 1 in 18 Multiracial adults (5.6%) engage in heavy drinking.

Heavy Drinking and Binge Drinking by Co-morbid Conditions and Smoking Status



- More than 1 in 4 current smokers (24.6%) and about 1 in 6 adults (17.4%) whose mental health was not good for 14 or more days in past 30 days engage in binge drinking.
- About 1 in 10 current smokers (9.3%) and about than 1 in 20 adults (4.4%) whose mental health was not good for 14 or more days in past 30 days engage in heavy drinking.

Summary

Prevalence of both heavy and binge drinking has remained stable over the past few years. In 2010, prevalence of heavy drinking was 4% and binge drinking was 15%. Males and younger age groups have a high prevalence of binge and heavy drinking. High prevalence of binge drinking is seen among adults who work 20 hours or more per week. Current smokers, adults whose mental health was not good for 14 or more days in past 30 days and adults with current asthma have high prevalence of binge drinking. High prevalence of heavy drinking is seen among adults who are current smokers.

The Healthy People 2010 target for the substance abuse objective was to reduce the proportion of adults engaging in binge drinking of alcoholic beverages during the past month to 6%. As 15% of adults in Kansas are binge drinkers of alcoholic beverages during the past month, further public health efforts are needed to reach the target in Kansas.

Immunization

Leading Health Indicator

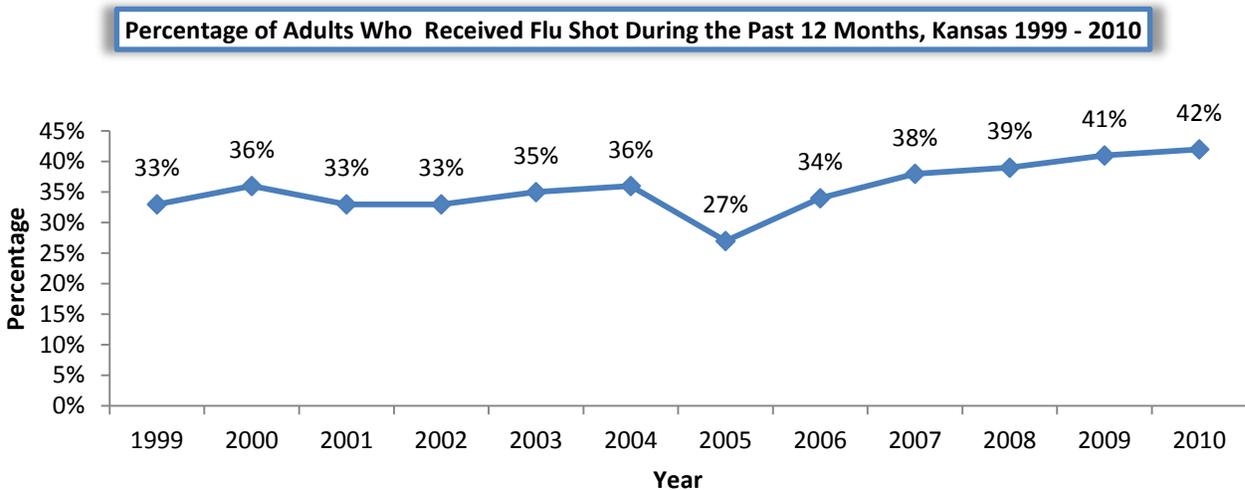
Immunization

2010 Kansas BRFSS

Influenza (the seasonal flu) is a contagious respiratory illness caused by influenza viruses. It can cause mild to severe illness, and at times can lead to death. Some people, such as older people, pregnant women, young children, and people with certain health conditions like asthma, chronic lung disease, heart disease, weakened immune system etc. are at high risk for serious flu complications. Pneumonia, bronchitis, sinus infections and ear infections are examples of flu-related complications. The best way to prevent the flu is by getting vaccinated each year.¹⁵

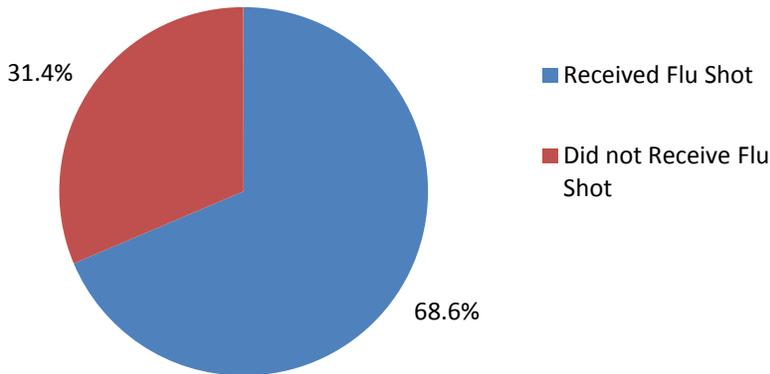
Pneumonia is an infection of the lungs usually caused by bacteria or viruses that can cause mild to severe illness in people of all ages. Signs of pneumonia can include coughing, fever, fatigue, nausea, vomiting, rapid breathing or shortness of breath, chills, or chest pain. The high risk population includes adults 65 years of age or older, children less than 5 years of age, people with underlying medical conditions (like diabetes, asthma, HIV/AIDS) and people who smoke cigarettes.¹⁶ It is recommended that people aged 65 years and older receive one dose of flu vaccine if unvaccinated or if previous vaccination history is unknown. For people younger than age 65 years who have chronic illness or other risk factors, including chronic cardiac or pulmonary disease (including asthma), chronic liver disease, alcoholism, diabetes, cigarette smoking etc., a 1-time revaccination 5 years or more after 1st dose is recommended.¹⁷

The 2010 BRFSS collected data on seasonal influenza vaccination and pneumococcal vaccination among adults 18 years and older.



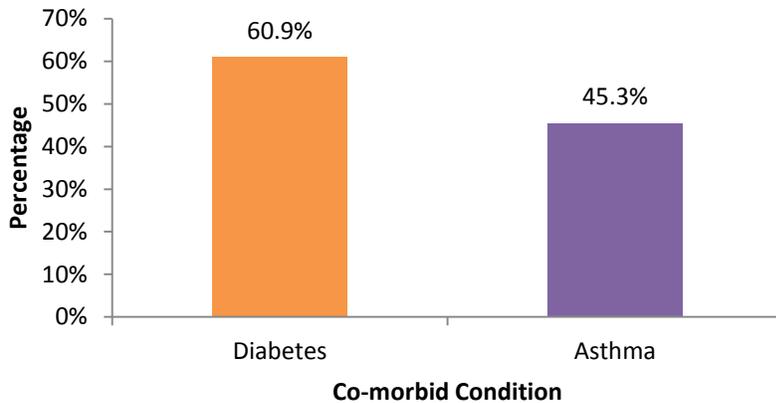
- 42.3% of adults 18 years and older received a seasonal flu shot within the past 12 months.

Percentage of Adults 65 Years and Older Who Received Flu Shot During the Past 12 Months



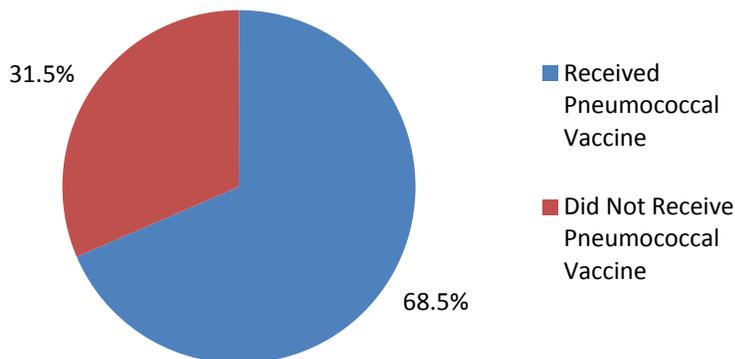
- Almost 7 in 10 adults 65 years and older (68.6%) received a seasonal flu shot during the past 12 months.

Percentage of Adults with Co-morbid Conditions Who Received Flu Shot During the Past 12 Months



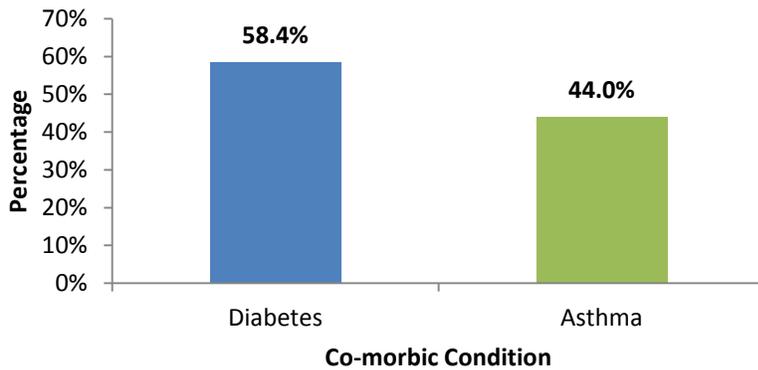
- Almost half of adults with current asthma (45.3%) received a seasonal flu shot during the past 12 months.
- About 6 in 10 adults with diabetes (60.9%) received a seasonal flu shot during the past 12 months.

Percentage of Adults 65 Years and Older Who Received Pneumococcal Vaccine



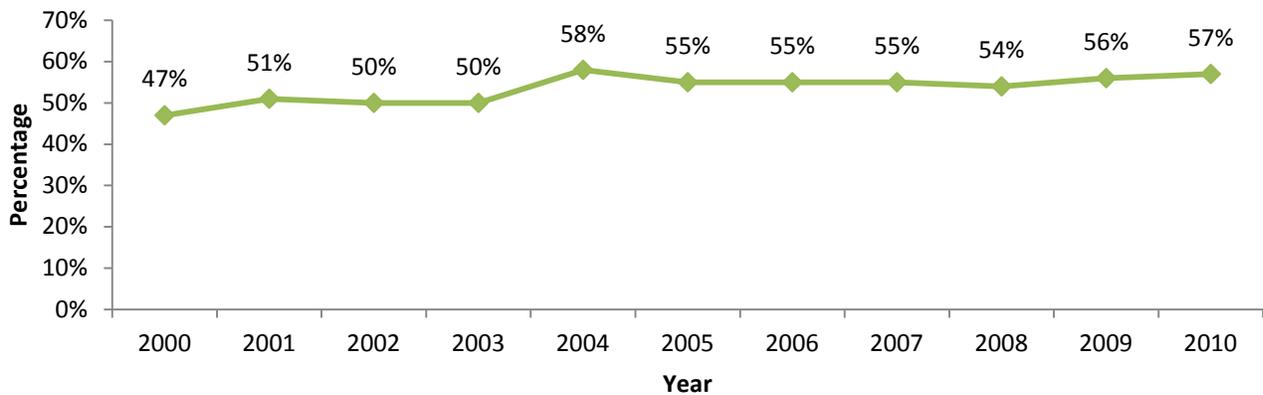
- Adults 65 years and older are at higher risk for acquiring pneumococcal infection than the rest of the population, therefore it is important for them to get vaccinated.
- About 2 in 3 adults 65 years and older (68.5%) have ever received pneumococcal vaccine.

Percentage of Adults with Co-morbid Conditions Who Received Pneumococcal Vaccine



- Adults with chronic health conditions like diabetes and asthma are at high risk for acquiring pneumococcal infection; therefore it is important for them to get vaccinated.
- About 4 in 7 adults with diabetes (58.4%) and 2 in 5 adults with current asthma (44.0%) have ever received pneumococcal vaccine.

Percentage of At Risk Adults Who Received Pneumococcal Vaccine, Kansas 2000 - 2010



At risk adults included in the chart above are adults 18 years and older who have either current asthma or diabetes or they are 65 years and older (regardless of presence of asthma or diabetes).

- More than half (55.8%) of the adults at risk for getting pneumonia ever received pneumococcal vaccine.

Summary

Over the past few years, the percentage of adults receiving seasonal flu shot has increased gradually. Only about half of the population at higher risk for acquiring pneumonia (e.g., adults 65 years and older, adults with chronic conditions such as diabetes or asthma) have ever received pneumococcal vaccine. Among adults 65 years and older, 7 in 10 adults (69.4%) received a seasonal flu shot during the past 12 months and 2 in 3 adults (68.5%) ever received pneumococcal vaccine.

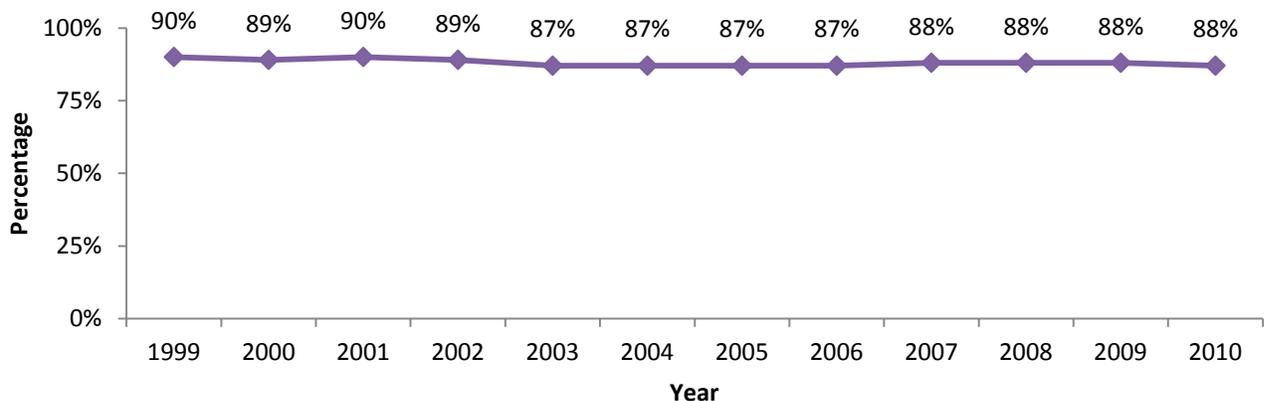
The Healthy People 2010 target was to increase the proportion of non-institutionalized adults age 65 years and older who are vaccinated annually against influenza to 90%. The 2009 Kansas estimate for this age group is far below this target. The Healthy People 2010 target for pneumococcal vaccination among adults 65 years and older was also 90%. The Kansas estimate for pneumococcal vaccination among adults of this age group is also far below the target. Further public health efforts are needed to create awareness regarding health benefits of these vaccinations and to assure that adults aged 65 years and older become vaccinated.

Access to Health Care

For many, lack of health care is a persistent barrier to good health.¹⁸ Access is frequently used to describe a broad set of concerns centering on the degree to which people are able to obtain needed services from the healthcare system. The United States Institute of Medicine (IOM) defined access as the timely use of personal health services to achieve the best possible health outcomes. An important characteristic of this definition is its reliance on both the use of health services and health outcomes when judging whether access has been achieved.¹⁹

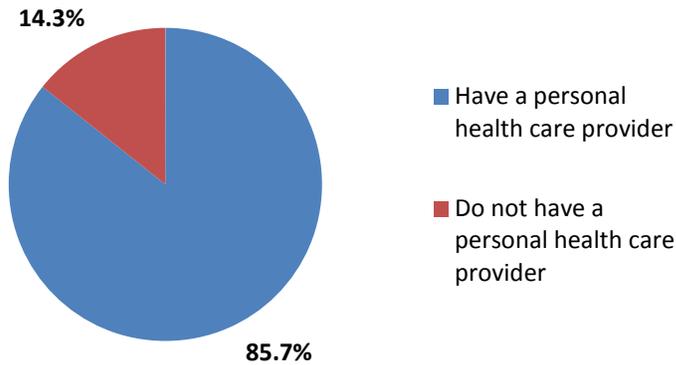
Overall, indicators of access to health care estimated by Kansas BRFSS are insurance coverage and having a personal health care provider.

Percentage of Adults Who Have Health Care Coverage, Kansas 1999 - 2010



- Almost 9 out of 10 adults 18 years and older (88%) have some kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare.
- The percentage of adults having some type of health care coverage has remained constant since 1999 (90% (95%CI: 88.5-90.7) in 1999 vs. 88% (95%CI: 86.3-88.6) in 2010).

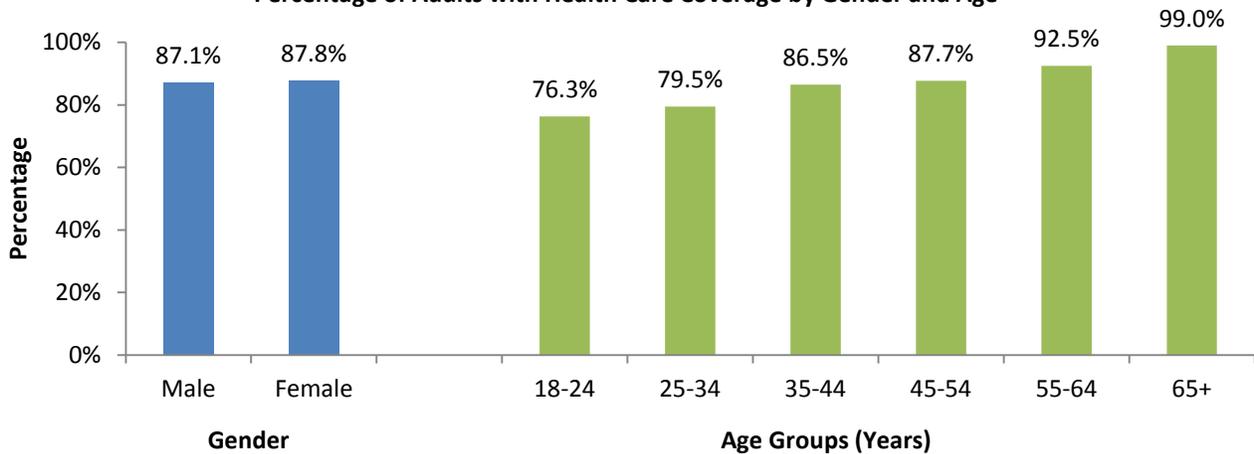
Percentage of Adults Who Have Personal Health Care Provider



- More than 8 in 10 adults (85.7%) have one or more person(s) as their personal doctor or health care provider.
- About 14.3% of adults do not have any one that they think of as their personal doctor or health care provider.

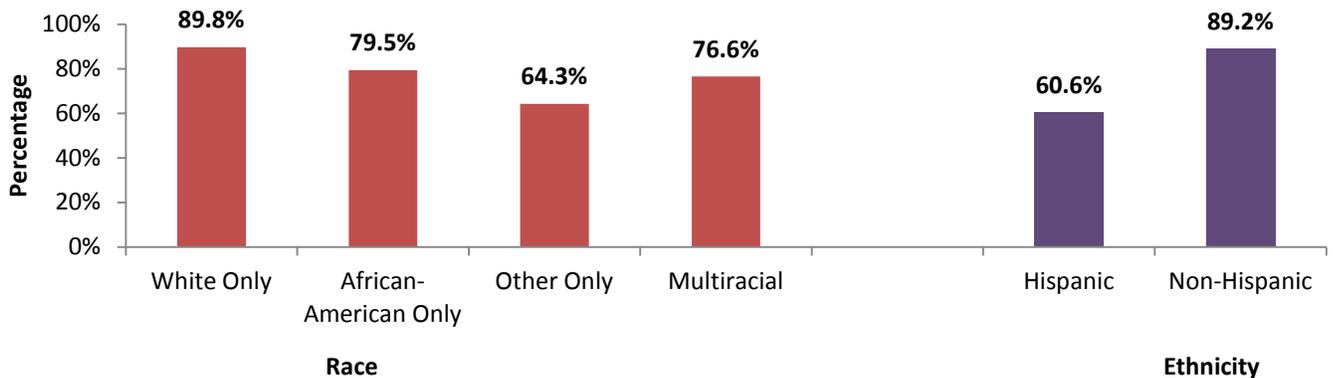
Health Care Coverage by Specific Subpopulations

Percentage of Adults with Health Care Coverage by Gender and Age



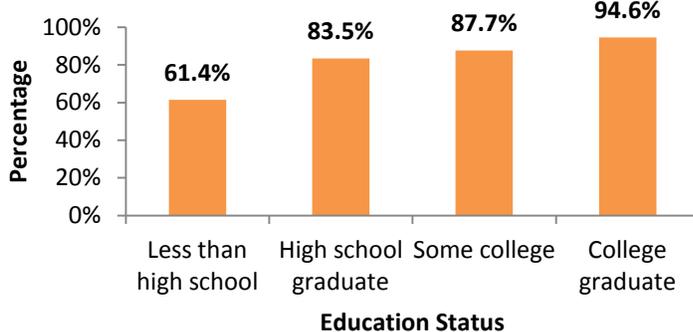
- About 9 in 10 males (87.1%) and females (87.8%) have health care coverage.
- Health care coverage increases with an increase in age. Percentage of health care coverage among 18-24 years old adults (76.3%, 95% CI: 69.7-82.9) is significantly lower than that of 35 years and older adults (35-44: 86.5%, 95% CI: 84.3-88.7; 45-54: 87.7%, 95% CI: 85.9-89.5; 55-64: 92.5%, 95% CI: 91.3-93.8; 65+: 99.0%, 95% CI: 98.6-99.4).

Percentage of Adults with Health Care Coverage by Race and Ethnicity



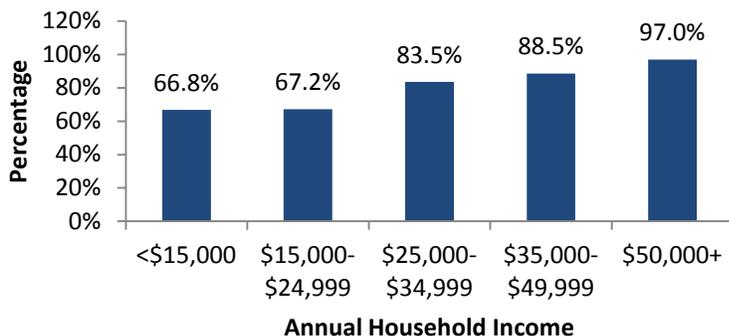
- A significantly lower percentage of Hispanics have health care coverage (60.6%, 95%CI: 53.4-67.7) as compared to non-Hispanics (89.2%, 95% CI: 88.1-90.3).
- A significantly lower percentage of African-Americans (79.5%, 95% CI: 73.0-85.9) and ‘other’ race (64.3%, 95% CI: 57.6-71.0) and multiracial (76.6%, 95% CI: 67.0-86.3) adults have health care coverage as compared to Whites (89.8%, 95% CI: 88.6-90.9).

Percentage of Adults with Health Care Coverage by Education Status



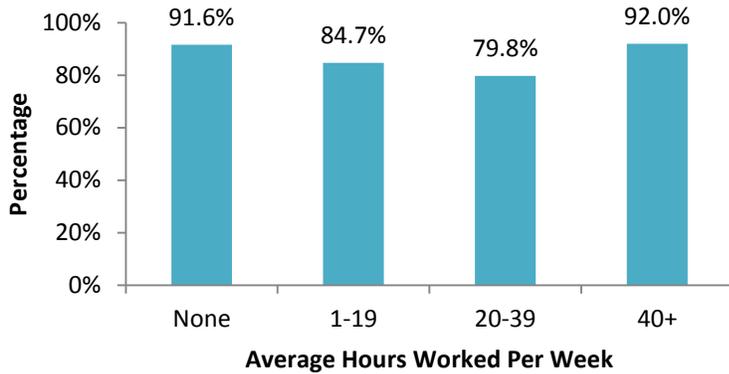
- About 6 in 10 adults (61.4%, 95% CI: 55.2-67.5) with less than high school education have health care coverage as compared to more than 9 in 10 adults (94.6%, 95% CI: 93.4-95.9) with college or higher level education.
- Percentage of adults with health care coverage increases with an increase in educational status.

Percentage of Adults with Health Care Coverage by Annual Household Income



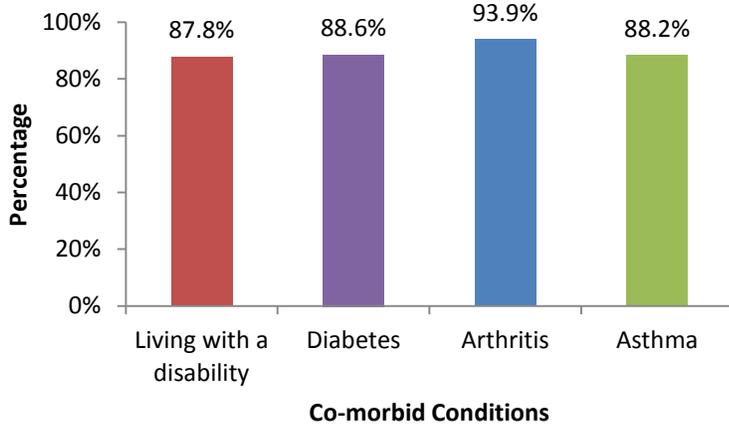
- About 7 in 10 adults (66.8%, 95% CI: 60.5-73.1) with annual household income less than \$15,000 have health care coverage as compared to more than 9 in 10 adults (97.0%, 95% CI: 96.1-97.9) with annual household income \$50,000 or more.
- Percentage of adults with health care coverage increases with an increase in annual household income.

Percentage of Adults with Health Care Coverage by Average Hours Worked Per Week



■ About 9 in 10 adults who work 40 or more hours per week (92.0%) have health care coverage.

Percentage of Adults with Health Care Coverage by Co-morbid Conditions



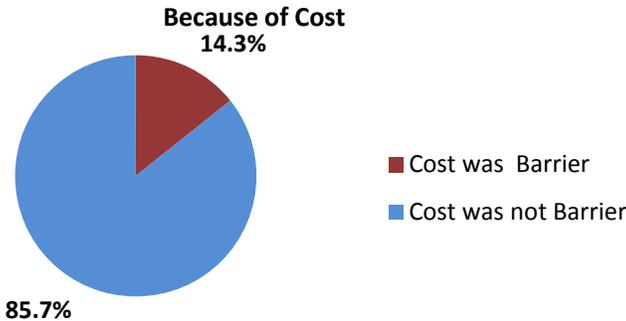
■ About 9 in 10 adults with chronic health conditions like diabetes, hypertension, arthritis, or asthma have health care coverage.

■ About 88% of adults living with a disability have health care coverage.

Medical Cost – a barrier for health care access: Analysis of data from the Medical Expenditure Panel Survey (MEPS) shows that rising out-of-pocket expenses and stagnant incomes increased the financial burden of health spending for families during 2001–2004, especially for the privately insured.²⁰ High increases in financial burden is seen among those with non-group coverage.²⁰

The 2010 Kansas BRFSS included a question on whether medical cost is a barrier to seeing a health care provider among Kansans.

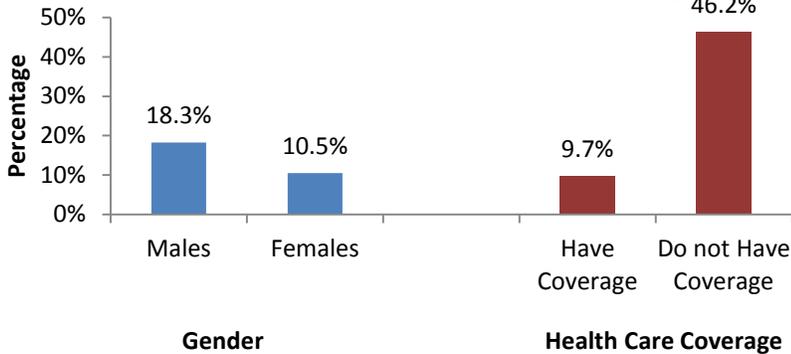
Percentage of Adults Who Could Not See a Doctor



- In the past 12 months, about 1 in 7 adults (14.3%) could not see a doctor when needed because of the cost.

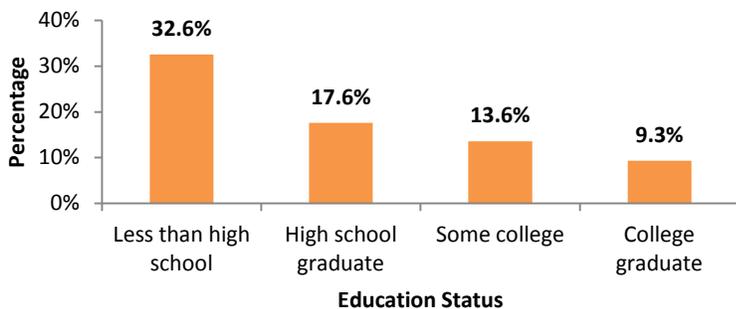
Medical Cost as a Barrier by Specific Subpopulations

Percentage of Adults Who Could Not See A Doctor Because of Cost by Gender and Health Care Coverage



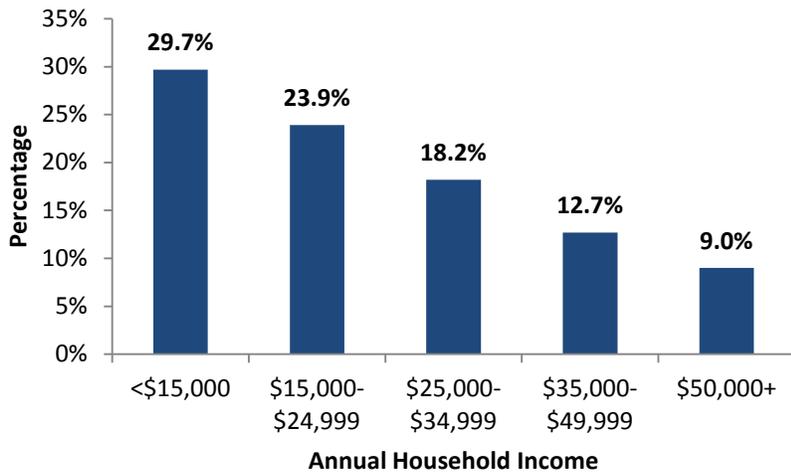
- A significantly higher percentage of females (18.3%, 95% CI: 16.2-20.4) reported that they could not see a doctor in the past 12 months because of the cost as compared to males (10.5%, 95% CI: 9.2-11.7).
- 1 in 10 adults who have health care coverage (9.7%) could not see a doctor in the past 12 months because of the cost.

Percentage of Adults Who Could Not See A Doctor Because of Cost by Education Status



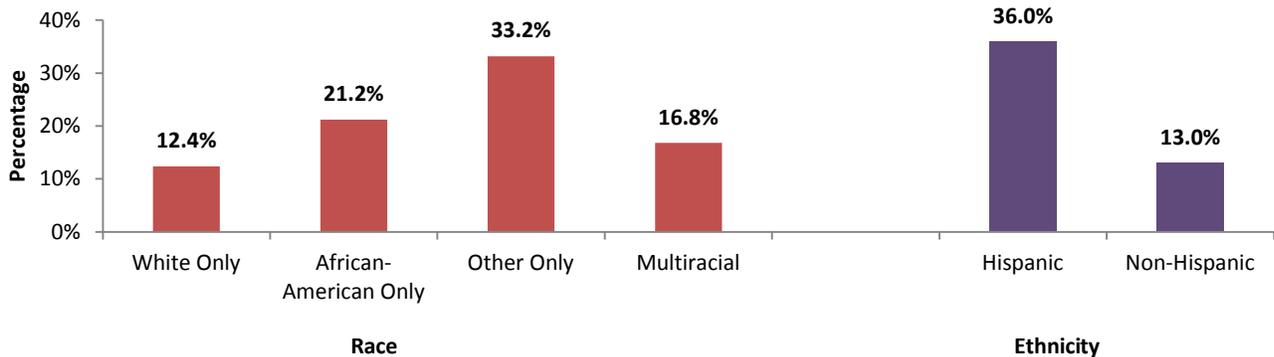
- About 1 in 3 adults with less than high school education (32.6%) could not see a doctor in the past 12 months because of the cost.
- About 1 in 10 adults with college or higher level of education (9.3%) could not see a doctor in the past 12 months because of the cost.

Percentage of Adults Who Could Not See A Doctor Because of Cost by Annual Household Income



- About 1 in 3 adults with annual household income less than \$15,000 (29.7%, 95% CI: 23.0-36.4) could not see a doctor in the past 12 months because of the cost.
- About 1 in 10 adults with annual household income \$50,000 or more (9.0%, 95% CI: 7.6-10.5) could not see a doctor in the past 12 months because of the cost.
- Medical cost as a barrier to care is a significantly higher problem among those with a lower annual household income.

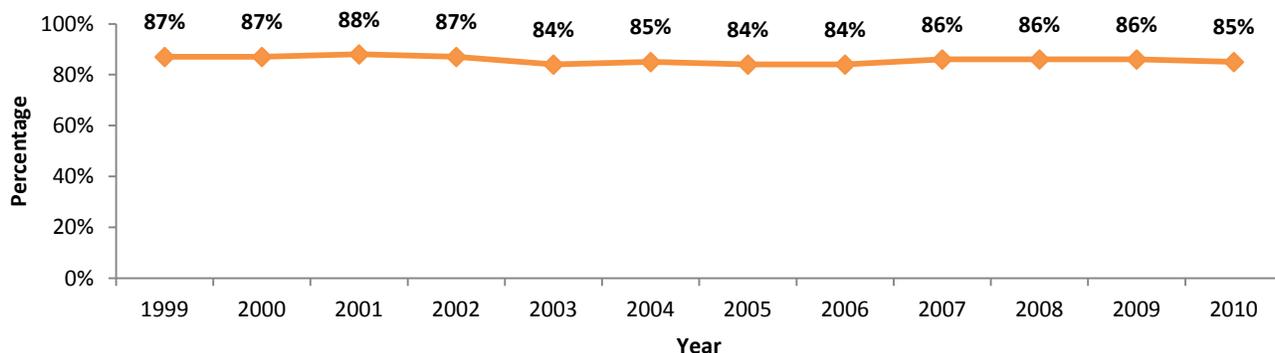
Percentage of Adults Who Could Not See A Doctor Because of Cost by Race and Ethnicity



- A significantly higher percentage of African-American adults (21.2%, 95% CI 14.2-28.1) could not see a doctor in the past 12 months because of the cost as compared to Whites (12.4%, 95% CI 11.2-13.7).
- Almost 1 in 3 Hispanic adults (36.0%) could not see a doctor in the past 12 months because of the cost as compared to 1 in 8 non-Hispanic adults (13.0%).

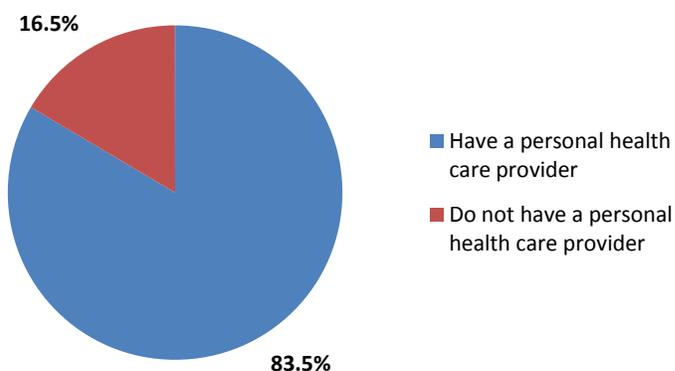
Access to Health Care among Working-Age Adults (18-64 Year Olds):

Percentage of Adults 18 - 64 Years Old Who Have Health Care Coverage, Kansas 1999-2010



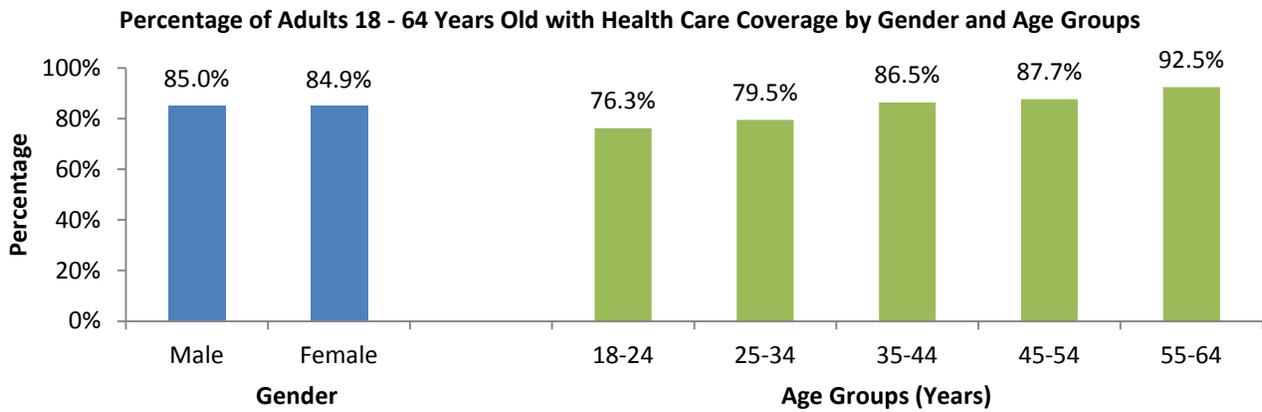
- Nearly 9 out of 10 adults 18 – 64 years old (85.0%) have some kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare.
- The percentage of adults 18-64 years old having some type of health care coverage has remained very consistent since 1999 (87% (95%CI: 86.1-88.9) in 1999 vs. 85% (95%CI: 83.5-86.3) in 2010).

Percentage of Adults 18 - 64 Years Old Who Have Personal Health Care Provider

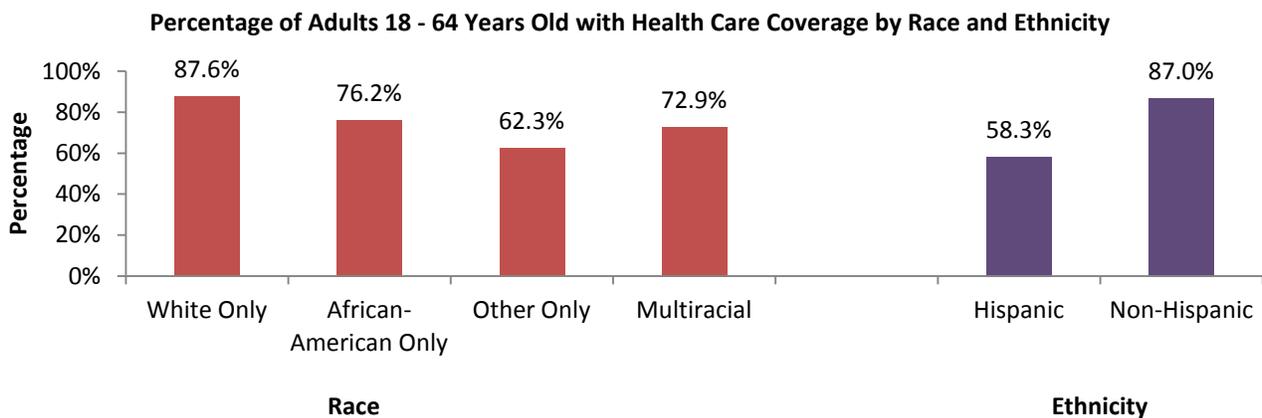


- More than 8 in 10 adults 18-64 years old (83.5%) have one or more person that they think of as their personal doctor or health care provider.
- About 1 in 6 adults 18-64 years old (16.5%) does not have a personal doctor or health care provider.

Health Care Coverage among 18-64 Year Olds by Specific Subpopulations

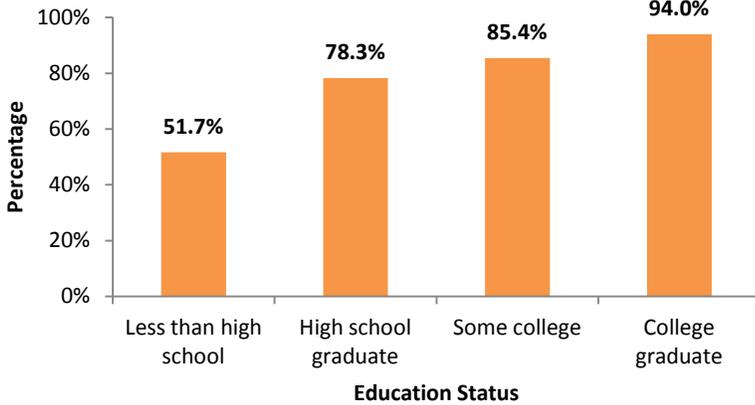


- About 9 in 10 males (85.0%) and females (84.9%) aged 18-64 years old have health care coverage.
- Health care coverage increases with an increase in age. The percentage of health care coverage among adults aged 18-24 years (76.3%, 95% CI: 69.7-82.9) is significantly lower than that of 35 years and older adults (35-44: 86.5%, 95% CI: 84.3-88.7; 45-54: 87.7%, 95% CI: 85.9-89.5; 55-64: 92.5%, 95% CI: 91.3-93.8).



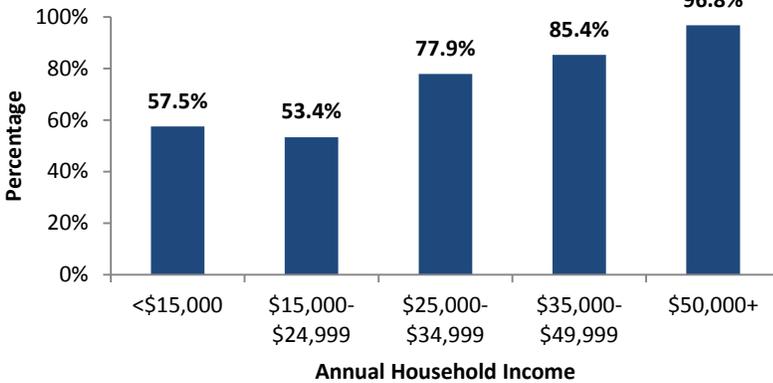
- A significantly lower percentage of 18-64 year old Hispanics have health care coverage (58.3%, 95% CI: 50.8-65.9) as compared to non-Hispanics (87.0%, 95% CI: 85.6-88.3).
- A significantly lower percentage of 18-64 year old African-Americans (76.2%, 95% CI: 68.8-83.6) and 'other' race (62.3%, 95% CI: 55.3-69.4), and multiracial (72.9%, 95% CI: 61.6-84.2) adults have health care coverage as compared to Whites (87.6%, 95% CI: 86.2-89.0).

Percentage of Adults 18 - 64 Years Old with Health Care Coverage by Education Status



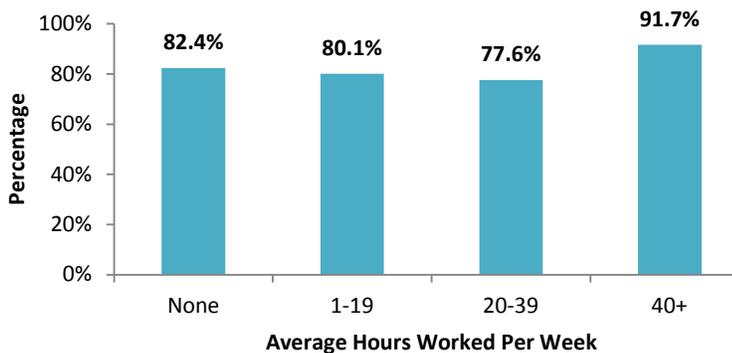
- About 5 in 10 (51.7%, 95% CI: 44.2-59.2) adults 18-64 years old with less than high school education have health care coverage as compared to more than 9 in 10 (94.0%, 95% CI: 92.5-95.4) with college or higher level education.
- The percentage of adults 18-64 years old with health care coverage increases significantly with an increase in education status.

Percentage of Adults 18 - 64 Years Old with Health Care Coverage by Annual Household Income

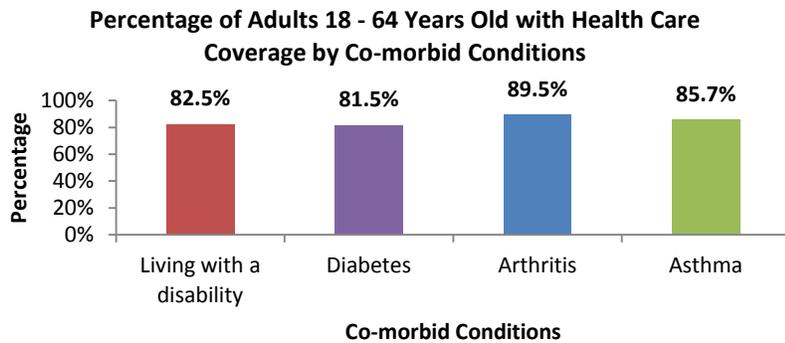


- More than 5 in 10 (57.5%, 95% CI: 49.5-65.5) adults 18-64 years old with an annual income of less than \$15,000 have health care coverage as compared to more than 9 in 10 (96.8%, 95% CI: 95.8-97.8) with an annual income of \$50,000 or higher.

Percentage of Adults 18 - 64 Years Old with Health Care Coverage by Average Hours Worked Per Week



- Percentage of health care coverage among adults who work 40 or more hours per week 9 in 10 (91.7%, 95% CI: 90.4-93.1) is significantly higher than adults who work less than 40 hours per week. (None: 82.4%, 95% CI: 78.4-86.4; 1-19 hours: 80.1%, 95% CI: 73.2-86.9; 20-39 hours: 77.6%, 95% CI: 73.1-82.1)



- More than 8 in 10 adults aged 18-64 years old with co-morbid conditions like diabetes, arthritis, or asthma have health care coverage.
- About 82% of adults living with a disability have health care coverage.

Summary

The percentage of adults 18 years and older having some kind of health care coverage (health insurance, prepaid plans such as HMOs or government plans such as Medicaid) has remained very stable over the past decade (1999-2009). Almost 9 in 10 adults 18 years and older in Kansas have some kind of health care coverage. More than 8 in 10 adults have one or more persons they think of as their health care provider.

A significantly lower percentage of Hispanic and African-Americans have health care coverage as compared to non-Hispanic and White adults, respectively. Education and annual household income levels have significant influences on the percentage of adults who have health care coverage. The percentage of adults who have health care coverage increases significantly with an increase in annual household income and with a higher education level.

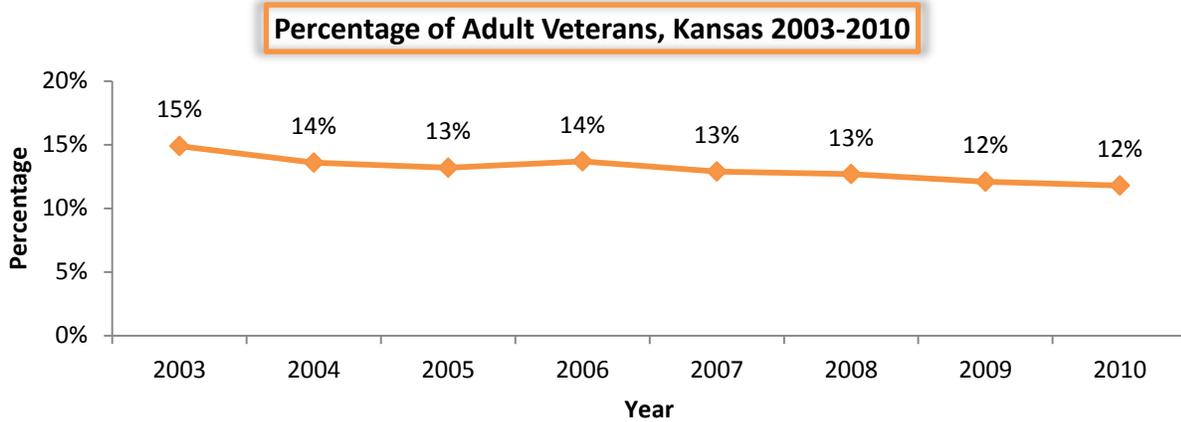
Medical cost remains a barrier for access to health care. About 1 in 7 adults could not see a doctor when needed in the past 12 months because of cost. About 1 in 10 adults with health care coverage also report medical cost as barrier for health care access. A high percentage of adults with an annual household income of less than \$15,000 (32.6%), and African-Americans (21.2%) could not see a doctor when needed in past 12 months because of cost.

The percentage of working-age adults (18-64 years old) having some kind of health care coverage (health insurance, prepaid plans such as HMOs or government plans such as Medicaid) also remained very stable over the past decade. About 9 in 10 adults 18-64 years old in Kansas had some kind of health care coverage in 2009. More than 8 in 10 adults 18-64 years old had one or more persons they thought of as their health care provider. Disparities regarding access to health care among adults 18-64 years old remain the same as described among all Kansas adults (18 years and older).

The Healthy People 2010 target for the access to health care objective was to increase the proportion of persons with health insurance to 100%, and to increase the proportion of persons who have a specific source of ongoing primary care to 96%. As 88% of adults in Kansas have health insurance and only 86% have a specific source of ongoing primary care, further public health efforts are needed to reach the target in Kansas.

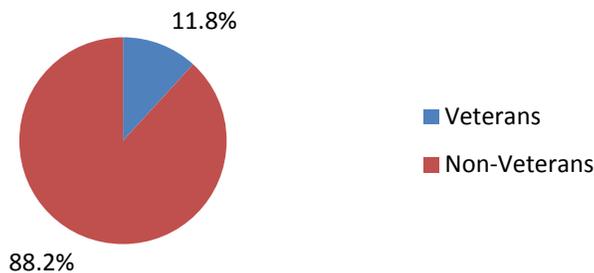
Veterans' Health

According to the U.S. Census, in 2010, there are an estimated 22.6 million civilian veterans aged 18 years and older in the United States and 215,780 civilian veterans in Kansas.²¹ Although an estimated 15 percent of veterans receive health care from Veteran Health Administration (VHA) facilities, the majority receive health care in the private and public sectors.²² Since 2003, Kansas BRFSS has been collecting estimates of veterans status in the State of Kansas. Veterans' constitute more than 10% of adult population in Kansas.



The Kansas Veterans are those who reported having ever served on active duty in the United States Armed Forces, either in the regular military or in a National Guard or military reserve unit. Active duty does not include training for the Reserves or National Guard, but does include activation, for example, for the Persian Gulf War. The percentage of civilian veterans in Kansas has decreased slightly from 15% (95% CI: 13.7-16.1) in 2003, to 12% (95% CI: 11.0-12.6) in 2010.

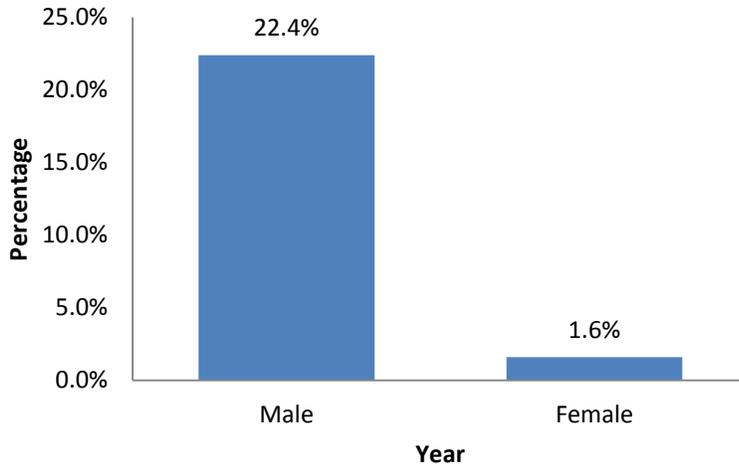
Percentage of Adults 18 years and older by Veterans Status



In Kansas, 1 in 9 adults (11.8%) ages 18 years and older are Veterans.

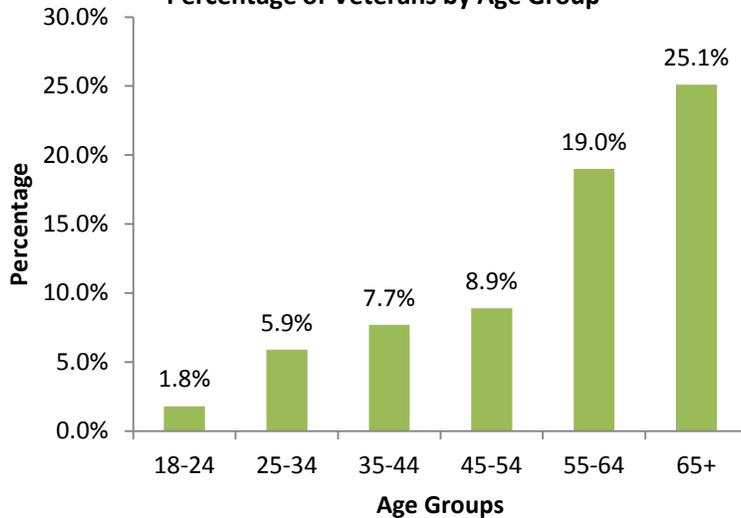
Veterans' Status by Specific Subpopulations

Percentage of Veterans by Gender



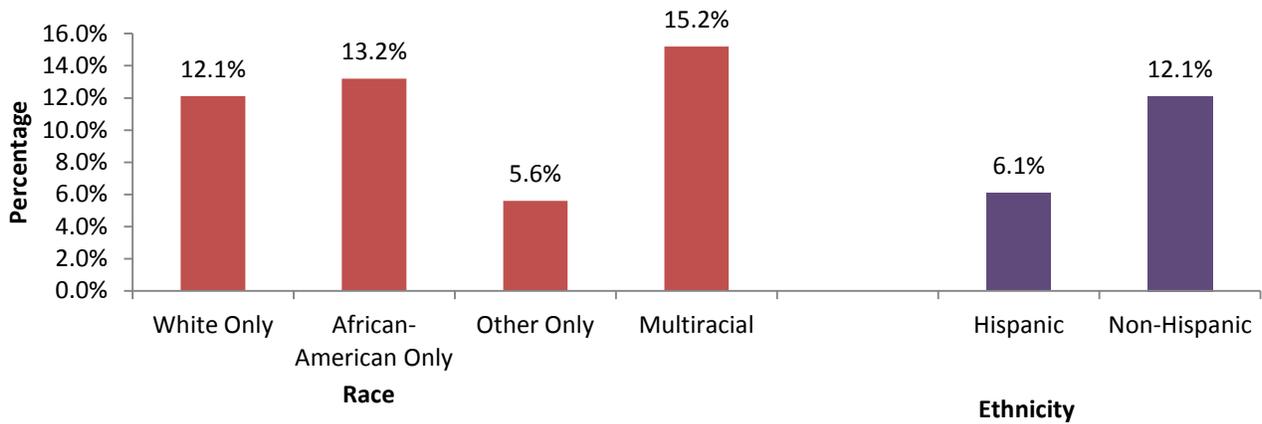
- About 22% (95% CI: 20.7-24.0) of males and 1.6% (95% CI: 1.2-2.0) of females are veterans.
- Percentage of veterans varies statistically by gender.

Percentage of Veterans by Age Group



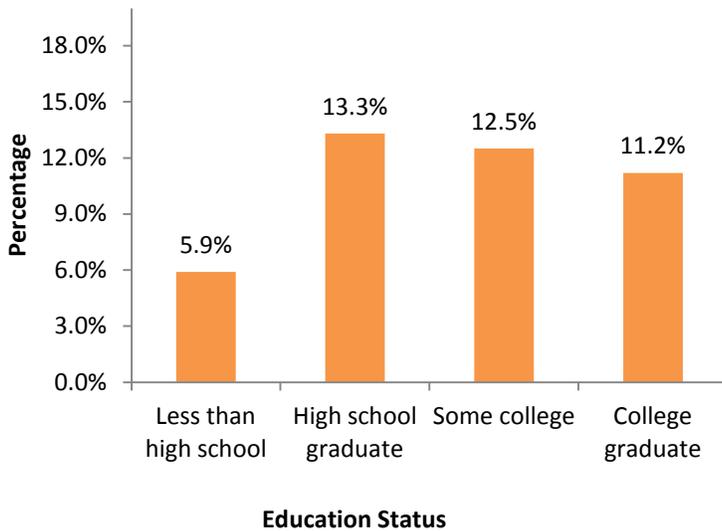
- About 1 in 4 adult age 65 years and older (25.1%) is a veteran.
- Percentage of adults who are veterans is significantly higher for older adults (55-64 years: 19.0%, 95% CI: 17.0-21.0; 65+ years: 25.1%, 95% CI: 23.3-26.9) as compared to younger adults (18-24 years: 1.8%, 95% CI: 0.1-3.5; 25-34 years: 5.9%, 95% CI: 3.7-8.1; 35-44 years: 7.7%, 95% CI: 5.7-9.7; 45-54 years: 8.9%, 95% CI: 7.3-10.5).

Percentage of Veterans by Race and Ethnicity



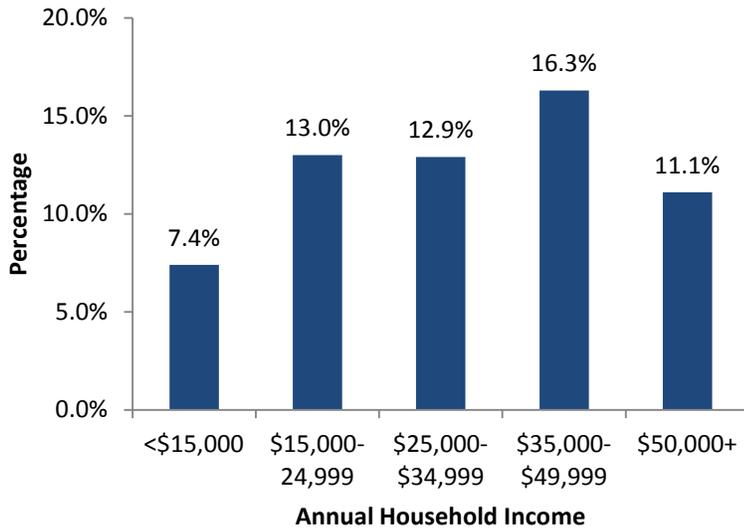
- About 1 in 8 adult African American and 1 in 7 adult multiracial is a veteran.
- About 1 in 16 (6.1%, 95% CI: 3.1-9.1) Hispanic adult and about 1 in 8 (12.1%, 95% CI: 11.3- 13.0) non-Hispanic adult is a veterans.
- A significantly lower percentage of hispanic adults are veterans as compared to non-Hispanic adults in Kansas.

Percentage of Veteran by Education Status



- A significantly lower percentage of adults with less than high school education are veterans (5.9%, 95% CI: 4.0-7.8) than those with high school graduate or more education (High school graduate or GED: 13.3%, 95% CI: 11.6-15.0; Some college education: 12.5%, 95% CI: 10.9-14.1 and College graduate: 11.2%, 95% CI: 9.9-12.5).

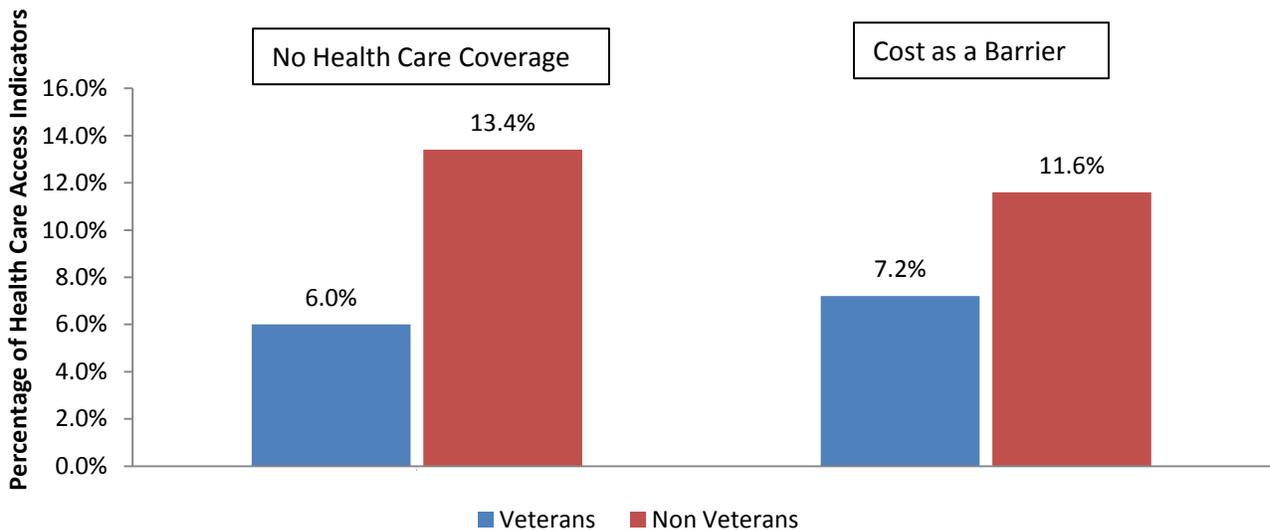
Percentage of Veteran by Annual Household Income



Percentage of veterans among adults with an annual household income of less than \$15,000 (7.4%, 95% CI: 5.2-9.7) is significantly lower than among adults with income more than \$15,000 (\$15,000-24,999: 13.0%, 95% CI: 10.6-15.5; \$25,000-\$34,999: 12.9%, 95% CI: 10.3-15.6; \$35,000-\$49,999: 16.3%, 95% CI: 13.6-19.0 and \$50,000+: 11.1%, 95%CI: 9.9-12.3).

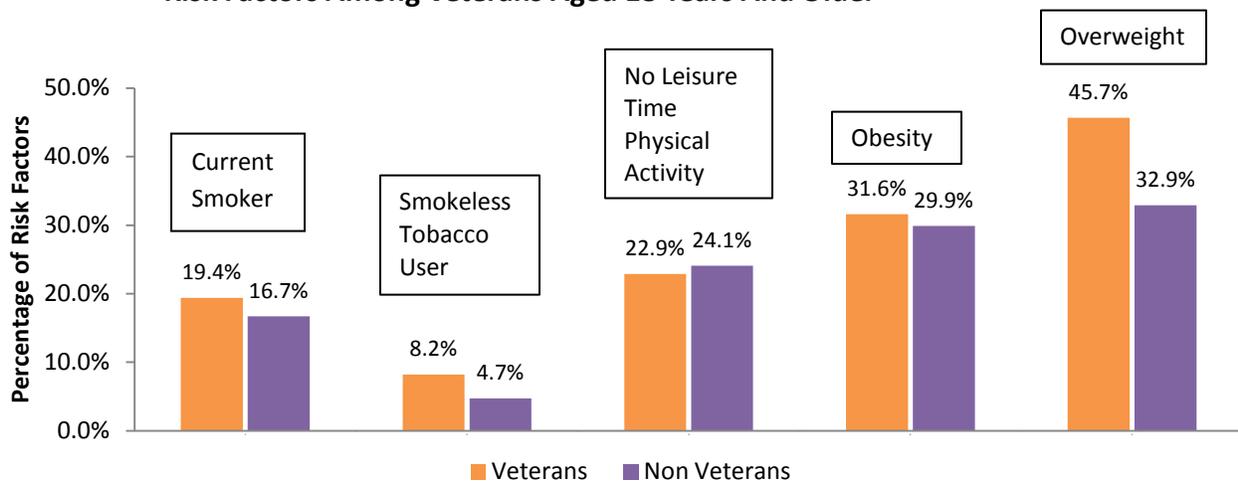
To better understand the veterans’ health issues; health care access, risk factors, co-morbid conditions and disability status among veterans in Kansas were examined.

Health Care Access Among Veterans Aged 18 Years And Older



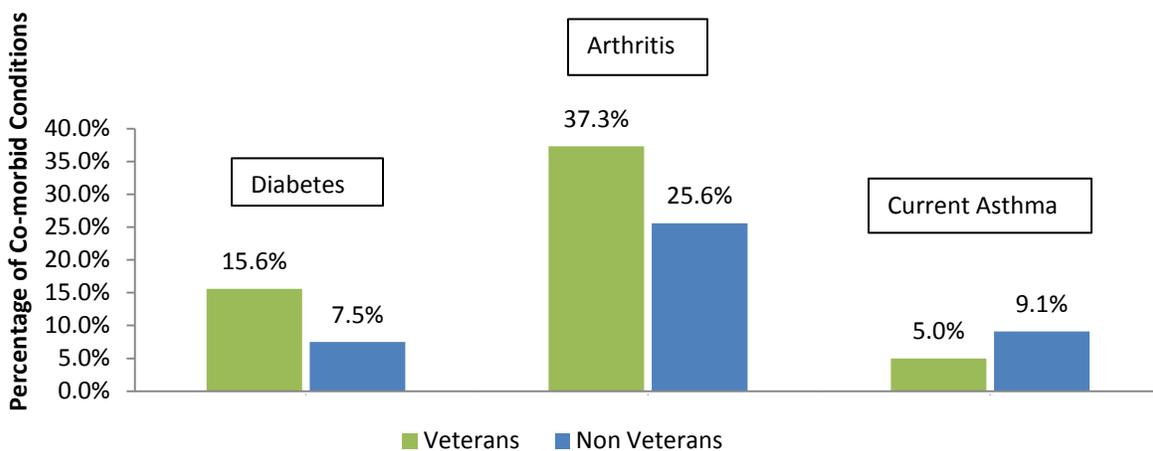
- About 6.0% (95% CI: 4.1-8.0) of veterans do not have health care coverage as compared to 13.4% (95% CI: 12.1-14.7) of non-veterans.
- About 7.2% (95% CI: 5.0-9.4) of veterans could not see a doctor when needed because of the cost as compared to 11.6% (95% CI: 10.5-12.7) of non-veterans.

Risk Factors Among Veterans Aged 18 Years And Older



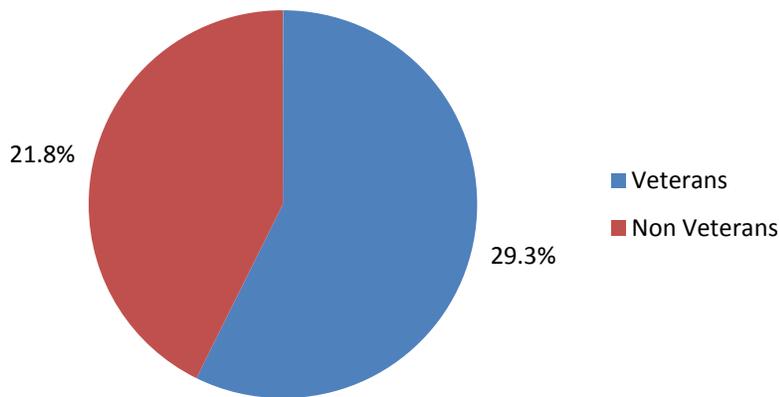
- About 1 in 5 (19.4%) veterans and about 1 in 6 (16.7%) non-veteran is a current smoker.
- About 8.2% (95% CI: 5.8-10.7) of veterans are smokeless tobacco users as compared to 4.7% (95% CI: 3.9-5.5) of non-veterans.
- About half of the veterans (45.7%, 95% CI: 42.1-49.3) are overweight whereas one-third of non-veterans (32.9%, 95% CI: 31.3-34.4) are overweight.

Co-morbid Conditions Among Veterans Ages 18 Years And Older



- About 2 in 5 veterans (37.3%, 95% CI: 32.8-41.8) have arthritis as compared to 1 in 4 non-veteran (25.6%, 95% CI: 24.0-27.2).
- About 15.6% (95% CI: 13.3-17.9) of veterans have diabetes as compared to 7.5% (95% CI: 6.8-8.1) of non-veterans.
- About 5.0% (95% CI: 3.6-6.3) of veterans have current asthma as compared to 9.1% (95% CI: 8.1-10.1) of non-veterans.

Prevalence Of Adults Living With A Disability Among Kansans Adults' Ages 18 Years And Older By Veteran Status



■ Higher percentage of veterans (29.3%, 95% CI: 26.3-32.4) are living with a disability as compared to non-veterans (21.8%, 95% CI: 20.6-23.0).

Summary

In Kansas, the percentage of veterans has slightly decreased over the years. Currently, about one tenth of the population is a veteran. More than one in five adult males in Kansas are veterans. About 25% of adults age 65 years and older are veterans. The percentage of being a veteran is higher among non-Hispanics, those with more than high school education and with an annual household income of more than \$15,000.

Some health disparities are seen among veterans as compared to non-veterans. Higher percentages of veterans are smokeless tobacco users, and are overweight as compared to non-veterans. The prevalence of arthritis and diabetes was higher among veterans as compared to non-veterans. A high percentage of veterans are living with a disability. A lower percentage of veterans do not have health care coverage as compared to non-veterans.

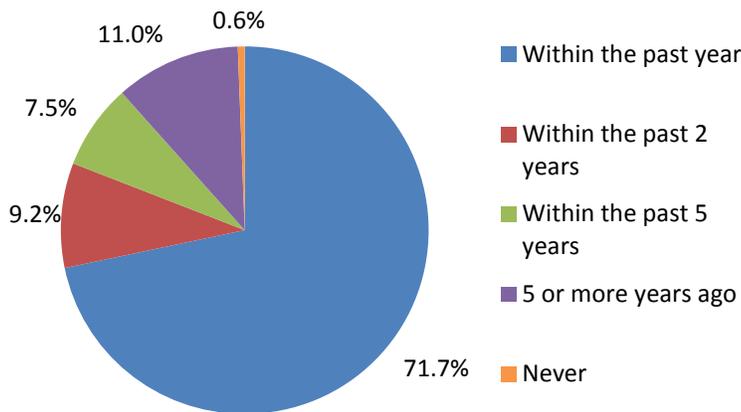
Oral Health

Oral health is an essential and integral component of overall health throughout life and is much more than just healthy teeth. Oral refers to the whole mouth, including the teeth, gums, hard and soft palate, linings of the mouth and throat, tongue, lips, salivary glands, chewing muscles, and upper and lower jaws. Not only does good oral health mean being free of tooth decay and gum disease, but it also means being free of chronic oral pain conditions, oral cancer, birth defects such as cleft lip and palate, and other conditions that affect the mouth and throat.²³

Oral health and general health status are interrelated. Oral infections in the mouth such as periodontal (gum) diseases may increase the risk of heart disease, may put pregnant women at greater risk of premature delivery, and may complicate control of blood sugar for people living with diabetes.²³

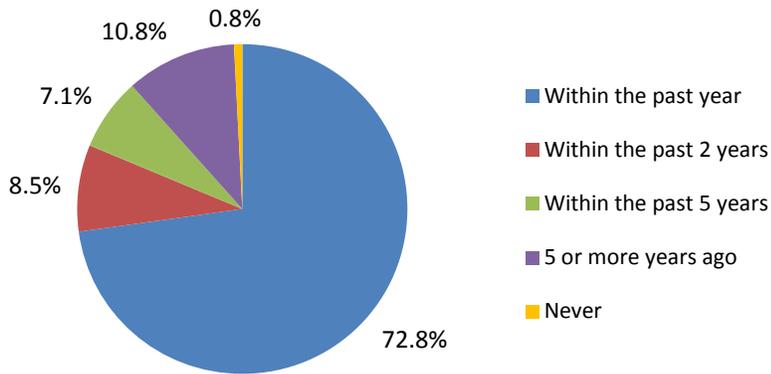
Risk factors such as tobacco use and poor dietary practices affect oral health. It is recommended that adults utilize the oral health care system at least once a year.²³

Percentage of Adults Who Visited Dentist or Dental Clinic



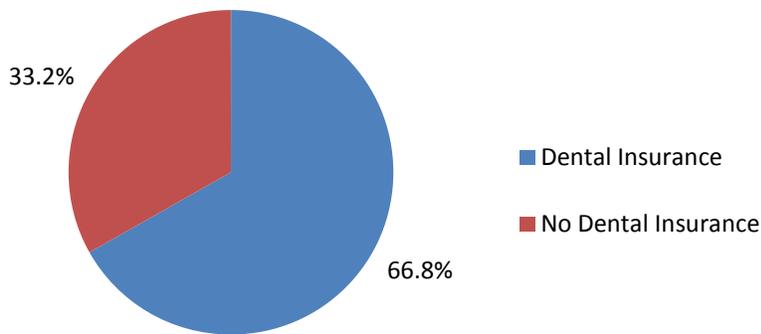
■ About 3 in 4 (72%) Kansans 18 years and older visited a dentist or a dental clinic for any reason within the past year.

Percentage of Adults Who Had their Teeth Cleaned



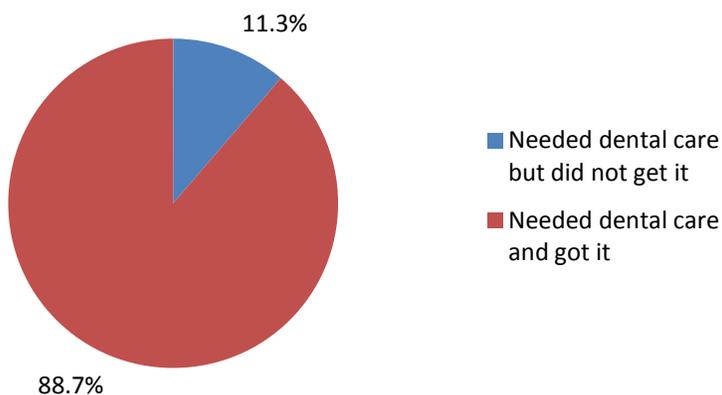
■ About 3 in 4 (73.0%) adults 18 years and older have had their teeth cleaned by a dentist or dental hygienist within the past year.

Percentage of Adults With No Dental Insurance



■ About 33.2% of the adult 18 years and older do not have any kind of insurance coverage that pays for some or all of the routine dental care, including dental insurance, prepaid plans such as HMOs, or government plans such as Medicaid.

Percentage of Adults Who Needed Dental Care But Did Not Get It



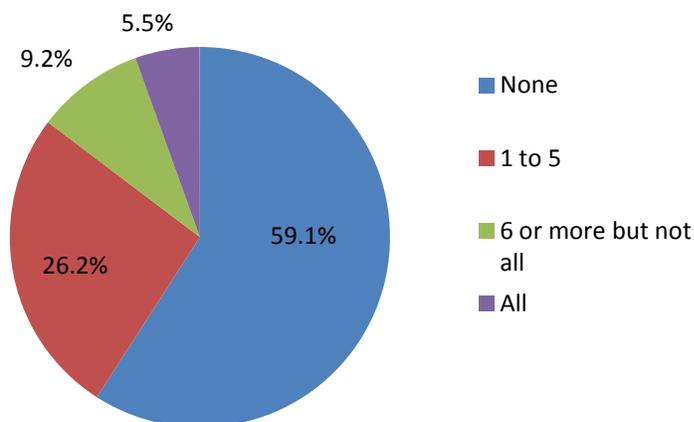
■ About 1 in 10 (11.3%) adults 18 years and older needed dental care but did not get it in the past 12 months.

The four main reasons for adults 18 years and older not receiving dental care in the past 12 months include: cost (78.2%); fear, apprehension, nervousness, pain, dislike going (6.2%); unacceptability of insurance, including Medicaid (4.7%); and inconvenient hours of dental care (3.5%).

Main reasons for Kansas Adults 18 years and older not receiving dental care they needed in the past 12 months, 2010 Kansas BRFSS

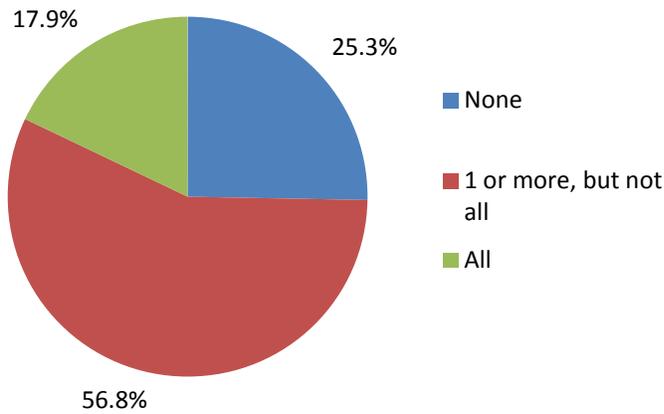
| Reasons For Not Receiving Dental Care | Weighted Percentage |
|---|----------------------------|
| Could not afford/cost/too expensive | 78.2% |
| Fear, apprehension, nervousness, pain, dislike going | 6.2% |
| Dentist would not accept my insurance, including Medicaid | 4.7% |
| Hours aren't convenient | 3.5% |
| Did not have time | 1.7% |
| Lack transportation/too far away | 1.6% |
| Other | 1.5% |
| Dentist cancelled appointment | 1.2% |
| Could not get into dentist/clinic | 1.0% |
| Do not have/know a dentist | 0.2% |
| Other ailments prevent dental care | 0.1% |

Percentage of Adults 18 Years and Older Who Had Their Permanent Teeth Removed



■ 41.0% of Kansas adults 18 years and older have had one or more of their permanent teeth removed because of tooth decay or gum disease.

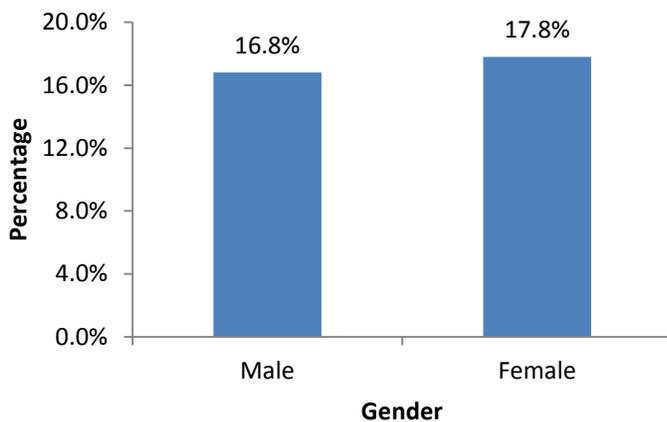
Percentage of Adults 65+ Who Have Had All of Their Permanent Teeth Removed



■ About 18% of Kansas adults 65 years and older had all their permanent teeth removed, and about 57% had one or more (but not all) permanent teeth removed.

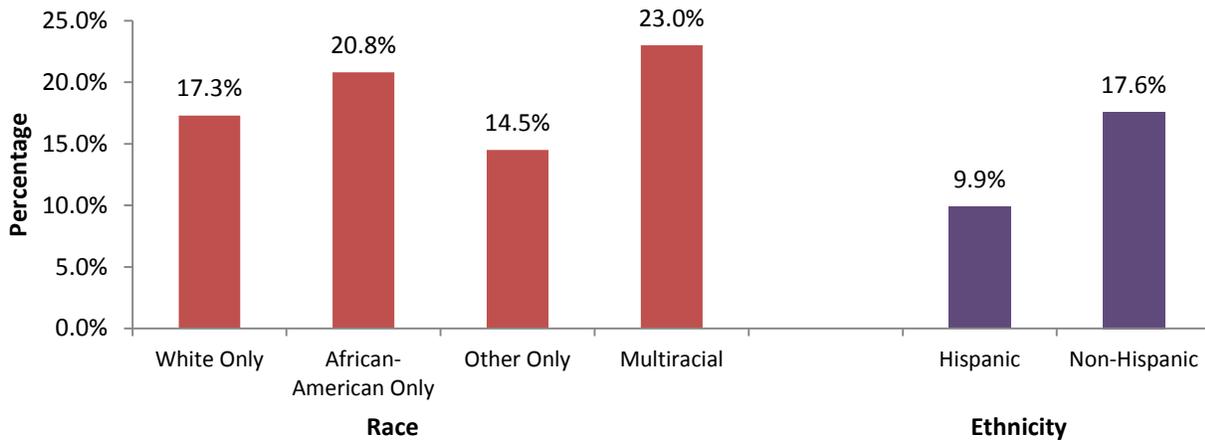
Percentage of Adults 65+ Who Have Had All of Their Permanent Teeth Removed by Specific Subpopulations

Percentage of Adults 65+ Who Have Had All of Their Permanent Teeth Removed by Gender



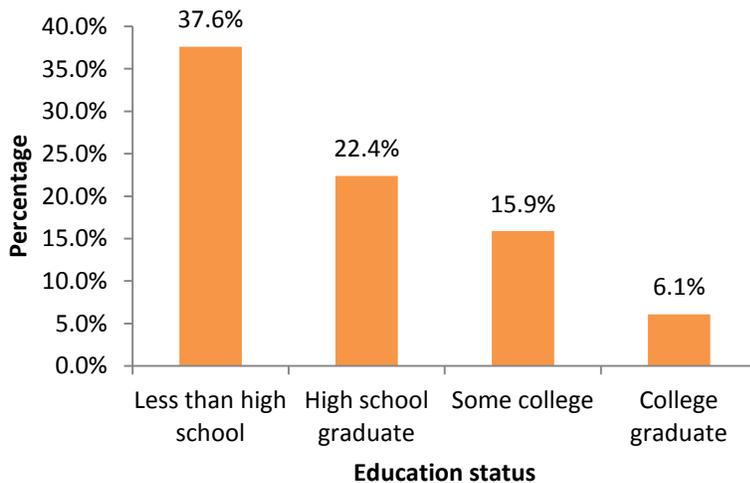
■ About 1 in 6 male (16.8%) and female (17.8%) age 65 years and older had all their permanent teeth removed.

Percentage of Adults 65+ Who Have Had All of Their Permanent Teeth Removed by Race and Ethnicity



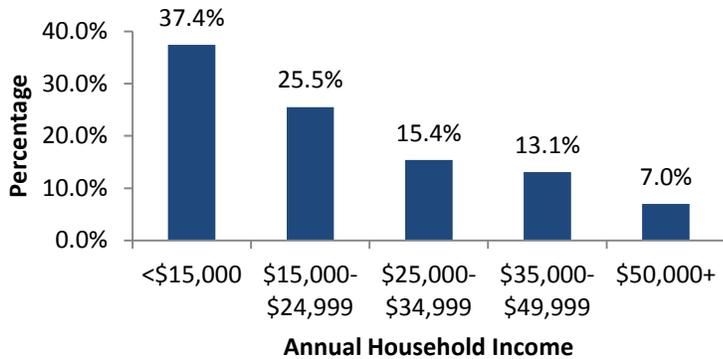
- About 1 in 4 multiracial adults 65 years and older (23.0%) and 1 in 5 African American adults 65 years and older had all their permanent teeth removed.
- About 1 in 10 Hispanic adults 65 years and older and 1 in 6 non-Hispanic adults 65 years and older had all their permanent teeth removed.

Percentage of Adults 65+ Who Have Had All of Their Permanent Teeth Removed by Education Status



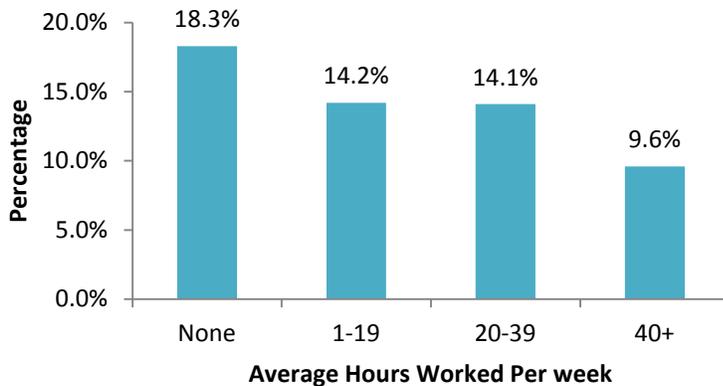
- About 37.6% (95% CI: 30.9-44.4) of adults 65 years and older with less than high school education had all their permanent teeth removed.
- About 6.1% (95% CI: 4.3-7.9) of adults 65 years and older with college or higher education had all their permanent teeth removed.
- Removal of all the permanent teeth is significantly higher among adults with less than high school education as compared to those with college graduate education.

Percentage of Adults 65+ Who Have Had All of Their Permanent Teeth Removed by Annual Household Income



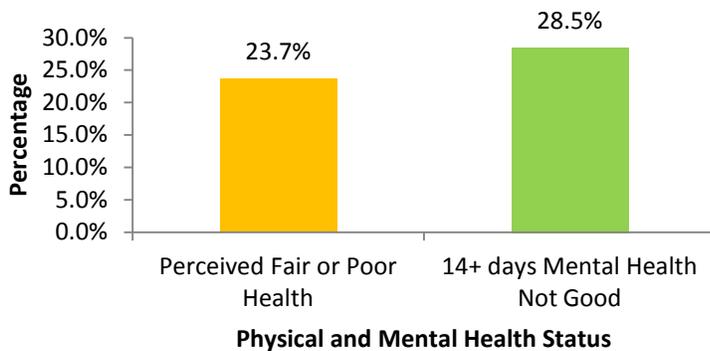
- Removal of all the permanent teeth is high among the lower income population.
- About 1 in 3 adults 65 years and older (37.4%, 95% CI: 31.0-43.9) whose annual household income is less than \$15,000 had all their permanent teeth removed as compared to 7.0% (95% CI: 4.7-9.4) of adults 65 years and older whose annual household income is equal to or more than \$50,000.

Percentage of Adults 65+ Who Have Had All of Their Permanent Teeth Removed by Average Hours Worked



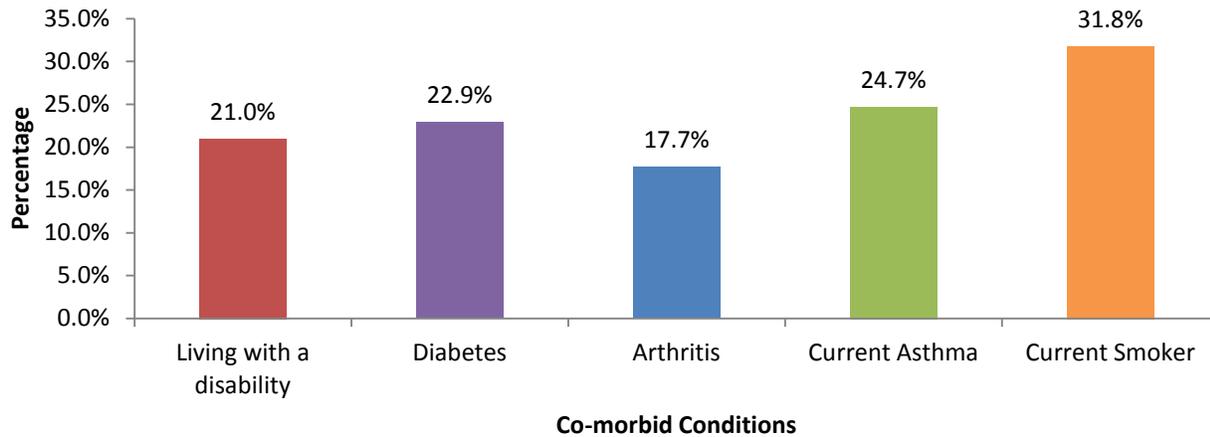
- A higher percentage of adults 65 years and older who do not work any hours per week on a job or business have had all of their permanent teeth removed (18.3%, 95% CI: 16.5-20.1) as compared to adults 65 years and older who work more than 40 hours per week (9.6%, 95% CI: 5.7-13.5)

Percentage of Adults 65+ Who Have Had All of Their Permanent Teeth Removed by Physical and Mental Health Status



- About 1 in 4 adults 65 years and older who perceived their health as fair or poor have had all of their permanent teeth removed.
- About 3 in 10 adults 65 years and older whose mental health was not good for 14 or more days in the past 30 days have had all of their permanent teeth removed.

Percentage of Adults 65+ Who Have Had All of Their Permanent Teeth Removed by Co-morbid Conditions and Current Smoking



- About 2 in 10 adults 65 years and older with co-morbid conditions like diabetes, arthritis, or current asthma have had all of their permanent teeth removed.
- About 1 in 5 adults 65 years and older living with a disability has had all of their permanent teeth removed.
- About 3 in 10 adults 65 years and older who are current smokers have had all of their permanent teeth removed.

Summary

About three- fourths (72%) of adult Kansans visited a dentist or a dental clinic for any reason within the past year and about the same (73%) had their teeth cleaned by a dentist or dental hygienist. One- third of adults do not have any kind of insurance coverage that pays for some or all of the routine dental care. One- tenth of adult Kansans needed dental care but did not receive it in the past 12 months. The main reason for not receiving dental care was cost. 40% of adult Kansans had at least one or more than one tooth removed. About 18% Kansas adults 65 years and older had all their permanent teeth removed. The percentage of adults 65 years and older having all of their permanent teeth removed was higher among Hispanics, adults with low annual household income, and education status. A high percentage of adults 65 years and older who are current smokers, whose mental health was not good for 14 or more days in the past 30 days, who perceived their health status as fair or poor, and who have co-morbid conditions such as diabetes and current asthma have their permanent teeth removed.

Technical Notes

Questionnaire Design

The survey consists of three sections:

- **Core Section:** Questions in these sections are asked by all states. The order and wording of the questions are identical across all states. Types of core questions include fixed, rotating, and emerging health issues.
 - **Fixed core:** This section of the survey contains questions that are asked every year. Fixed core topics include health status, health care access, healthy days, life satisfaction, emotional satisfaction, disability, tobacco use, alcohol use, exercise, immunization, HIV/AIDS, diabetes, asthma, and cardiovascular disease.
 - **Rotating core:** This section contains questions that are asked every other year.
 - **Odd years (2005, 2007, 2009, etc):** Questions on fruits and vegetables, hypertension awareness, cholesterol awareness, arthritis burden, and physical activity are asked.
 - **Even years (2006, 2008, 2010, etc):** Questions on women’s health, prostate screening, colorectal cancer screening, oral health and injury are asked.
 - **Emerging Health Issues:** Questions on emerging health issues are asked to assess status of emerging issues. The CDC staff and the state coordinators later decide if these questions should become a part of the fixed core in future years.
- **Optional Modules** include questions on specific health topics. CDC provides a pool of questions from which states may select. States have the option of adding these questions to their survey. CDC’s responsibilities regarding these questions include development of questions, cognitive testing, financial support to states to include these questions on the questionnaire, data management, limited analysis and quality control.
- **State added questions** are based on public health needs of each state. State added questions include questions not available under CDC supported optional modules in that year or emerging health issues that are specific to each state. Any modifications made to the CDC support modules available in that year make the module a state added module. The CDC has no responsibilities regarding these questions.

Each year, stakeholders are invited to attend an annual planning meeting and propose optional modules and state added questions to be added to the Kansas survey. Then, a survey selection committee consisting of the BRFSS Coordinator, Director of Science and Surveillance/Health Officer II, and Bureau of Health Promotion Director meet to determine the questionnaire content, using a specific set of criteria for question selection.

Sampling

The 2010 BRFSS used a disproportionate stratified sample consisting of ten geographical strata. These 10 geographical strata include; Johnson county, Sedgwick county, Shawnee county, Wyandotte county, Northwest public health district, Southwest public health district, North Central public health district, South Central public health district excluding Sedgwick county, Northeast public health district excluding Johnson, Shawnee and Wyandotte counties, and Southeast public health district. The sample drawn from each geographical stratum was based on population size within each geographical stratum, the confidence level and the margin of error. This sampling methodology includes random selection of telephone numbers within geographical strata comprised of county groupings, and is commonly used to increase collection from geographically identifiable subpopulations, to increase the accuracy of prevalence estimates for small area estimates, such as rural areas. Thus, the sampling methodology of the 2010 survey and for future Kansas BRFSS will address the need to collect adequate sample to provide local or county level data. These data are needed to determine priority health issues, to identify population subgroups at higher risk of illness, and to monitor the health status of local communities. This goal can be achieved by providing BRFSS data for the individual counties (counties with bigger population sizes) and for groups of counties with very small populations.

Approximately the same number of persons was called each month throughout the calendar year to reduce bias caused by seasonal variation of health risk behaviors. Potential working telephone numbers were dialed during three separate calling periods (daytime, evening, and weekends) for a total of 15 call attempts before being replaced. Upon reaching a valid household number, one household member ages 18 years or older was randomly selected. If the selected respondent was not available, an appointment was made to call at a later time or date. Because respondents were selected at random and no identifying information was solicited, all responses to this survey are anonymous.

Response Rate

The CASRO (Council of American Survey Research Organizations) response rate is used as a measure of quality of data. The 2010 Kansas BRFSS achieved a rate of 60.0% indicating reliable results. The CASRO formula is based on the number of interviews completed, the number of households reached, and the number of households with unknown eligibility status. The CASRO response rate is used because in addition to those persons who refused to answer questions, lack of response can also arise because household members were not available despite repeated call attempts, or household members refused to pick up the phone based on what they detect from caller ID.

Weighting Procedure

Weighting is a process by which the survey data are adjusted to account for unequal selection probability and response bias and to more accurately represent the population from which the sample was drawn. The responses of each person interviewed are assigned a weight which accounts for the density stratum, the number of telephone numbers in the household, the number of adults in the household, non-response, non-coverage of households without telephones and the demographic distribution of the sample. Alterations in the weighting formulas are made to arrive at estimates for prevalence of households and among children in specific age groups.

Estimates

Data results from the BRFSS are estimates of the real population prevalence. To account for sampling error and for the accuracy of the estimate, 95% confidence intervals are calculated. A confidence interval contains an upper and lower limit. We are 95% confident that the true population percentage is between the lower limit and the upper limit. The smaller the range between the lower limit and upper limit, the more precise the estimated percentage is. In other words, the narrower the confidence interval, the better.

Split Questionnaire

To accommodate increasing data needs, the Kansas BRFSS used a split questionnaire design in 2010. CDC optional modules and state added questions are organized by topics into two parts; part A and part B. All 8,570 respondents answered questions from the core section. Then each telephone number was randomly assigned to part A or part B prior to being called. Approximately half of the respondents received part A and the other half received part B, (i.e. approximately 4,000 respondents for each part).

Advantages of a split questionnaire:

- Collect data on numerous topics within one data year.
- Collect in-depth data on one specific topic.
- Ability to keep questionnaire's time and length to a minimum.

Disadvantages of a split questionnaire:

- Complexity of data weighting; additional weighting factors are needed.
- Variables on part A cannot be analyzed with variables on part B.

Analysis of split questionnaire:

The sample size for each split of the questionnaire is approximately half of the total sample size. As mentioned above, each respondent is randomly assigned to part A or B. The questions regarding

certain conditions are included in the core section (e.g. diabetes, disability, asthma, etc.). State added questions and optional modules are included on part A or part B. These additional questions on a specific health condition are asked from respondents who are assigned to a particular split questionnaire. This results in approximately half of the respondents who were identified with a particular condition from the core section responding to additional questions on the specific condition. Also, the number of adults reporting the specific health condition may vary on each question due to respondents terminating at various points in the survey.

Limitations

Like any other research method, BRFSS has its limitations.

- The BRFSS was conducted only among non-institutionalized adults residing in private residences with landline telephones in 2010. Thus, it excludes individuals without landline telephone service, those on military bases, and individuals in institutions. However, because phone ownership is high in Kansas (greater than 95%), it is unlikely that failing to reach these persons will substantially alter results.
- All information is self reported which may introduce bias such as recall bias, reporting bias, etc.
- BRFSS is not ideal for low prevalence conditions.

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