

Health Risk Behaviors of Kansans

2009 Kansas Behavioral Risk Factor Surveillance System



Kansas BRFSS
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Health Risk Behaviors of Kansans 2009

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Kansas Department of Health and Environment
Bureau of Health Promotion

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Kansas Department of Health and Environment (KDHE) Mission

To protect the health and environment of all Kansans by promoting responsible choices.

Through education, direct services and the assessment of data and trends, coupled with policy development and enforcement, KDHE will improve health and quality of life. We prevent illness, injuries and foster a safe and sustainable environment for the people of Kansas.

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BRFSS Overview

The Behavioral Risk Factor Surveillance System (BRFSS) is a random digit dial telephone survey among 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 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 2009 survey consisted of 192 questions and took an average of 25 minutes to complete. Survey topics on the 2009 Kansas BRFSS core section included: health status, healthy days, health care access, sleep, exercise, diabetes, hypertension awareness, cholesterol awareness, cardiovascular disease prevalence, asthma, tobacco use, demographics, caregiver status, disability, alcohol consumption, immunization, arthritis burden, fruit and vegetables, physical activity, HIV/AIDS, emotional support and life satisfaction, cancer survivors, random child selection module, childhood asthma prevalence module, and questions pertaining to asthma call back survey, Arthritis Management, Arthritis Call Back Survey Information, and Problem Gambling. The state-added and CDC optional modules included Pre-Diabetes, Diabetes, Diabetes Assessment, Actions to Control High Blood Pressures, Tobacco Indicators, Oral Health, Visual Impairment and Access to Eye Care, Inadequate Sleep, Mental Illness and Stigma, Disability, Tetanus Diphtheria for adults and adolescents, Human Papilloma Virus for adult and child, Shingles, and Social Context.

The 2009 BRFSS survey also included questions on emerging health issues from September-December among adults and children. Three modules included questions on influenza-like illness among adults and children, H1N1 vaccination among adults and children, and High Risk/Health Care Worker.

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

- Monitoring the leading contributors to morbidity and premature death
- Tracking the health status and assess 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 the public health programs

Data from the Kansas BRFSS survey are weighted to account for the complex sample design and non-response bias such that the resulting prevalence 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 Healthy People 2010 Leading Health Indicators

The Healthy People 2010 is a comprehensive nationwide plan consisting of goals and objectives related to disease prevention and improvement of the health of all people in the United States during the 21st century. The Healthy People 2010 is the road map for addressing existing and emerging health issues, reversing unfavorable trends, and expanding past achievements in health in the United States. The Healthy People 2010 has identified ten health indicators to assess and monitor major public health concerns.

The 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 the Kansas data on seven of the ten Leading Health Indicators, which are measurable using 2009 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 Seven 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	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%	15%
<i>Tobacco Use</i>									
Obj. Reduce cigarette smoking by adults.	22%	20%	20%	18%	20%	18%	18%	18%	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%	6%
<i>Mental Health</i>									
Obj. Increase the proportion of adults with recognized depression who receives treatment.	-	-	-	-	-	-	42%	-	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%	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%	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%	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%	96%

Physical Activity

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 prevention of chronic conditions like diabetes mellitus, cardiovascular disease, obesity, cancer, musculoskeletal diseases, and depression.¹

Guidelines for physical activity have developed and changed over the years. 2008 Physical Activity Guidelines for Americans (2008 Guidelines), a science-based guide on the types and amounts of physical activity, describes that for substantial health benefits, adults should do at least 150 minutes (2 hours and 30 minutes) a week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic activity.^{2,3}

Recommendations for physical activity have evolved over the years. The initial recommendations emphasized vigorous physical activity. Current recommendations emphasize not only vigorous physical activity, but also moderate physical activity and the integration of the two into an individual's lifestyle.

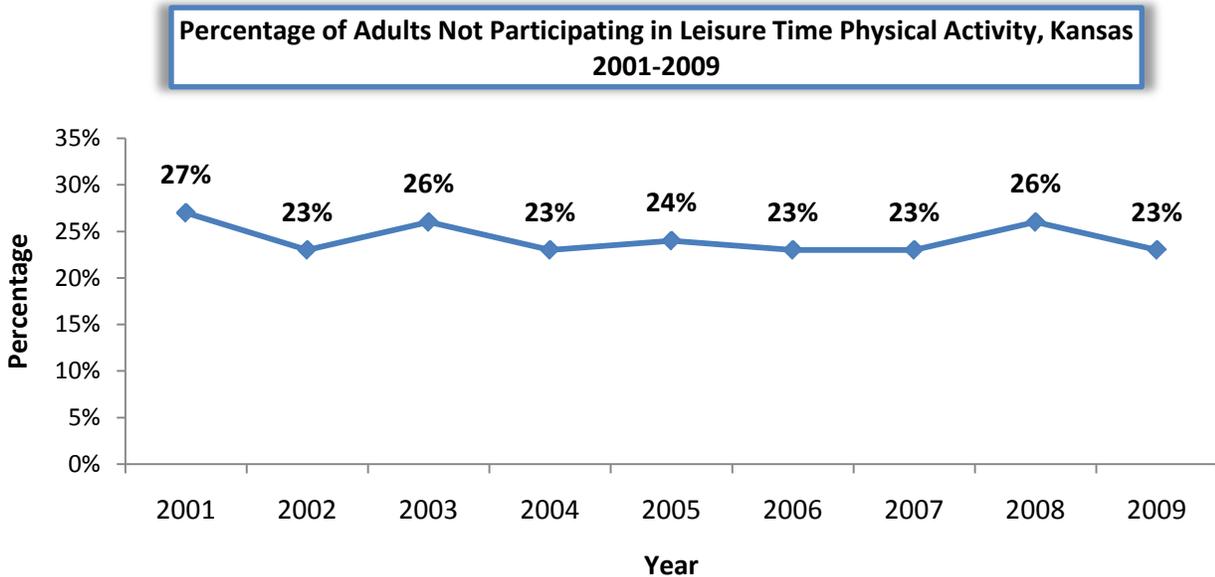
Types of Physical Activity

- ◆ **Moderate physical activity** involves small increases in heart rate and breathing rate, e.g., walking, gardening, vacuuming, etc.
- ◆ **Vigorous physical activity** involves large increases in heart and breathing rate, e.g., running, aerobics, etc.
- ◆ **Leisure time physical activity** involves physical activities or exercises, other than a regular job, such as running, calisthenics, golf, gardening, or walking for exercise.

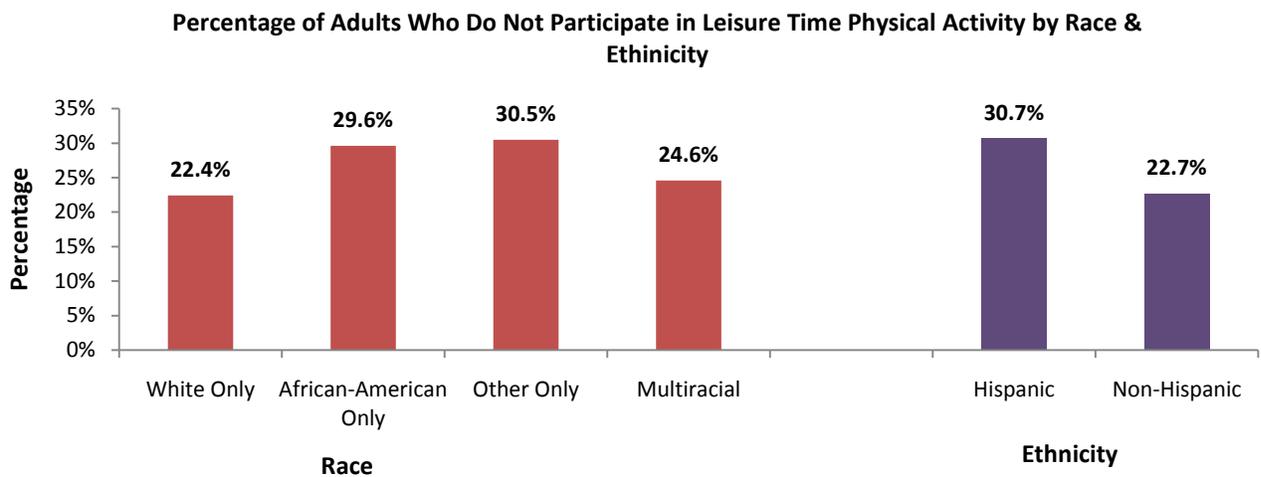
Physical Activity Recommendations

- **Meets Recommendation:** Adults who do moderate physical activity 30 minutes or more per day, 5 or more days per week OR vigorous physical activity 20 minutes or more per day, 3 or more days per week.
- **Insufficient Physical Activity:** Adults who do some activity but not enough to meet the recommendation.
- **Inactive:** Adults who do not do any physical activity.

2009 BRFSS survey included a question on leisure time physical activity that includes participation in any physical activity or exercise other than regular job such as running, calisthenics, golf, gardening, or walking for exercise. An estimated 23.1% of the adult Kansans do not participate in any leisure time physical activity. Since 2001, this percentage has not changed drastically.

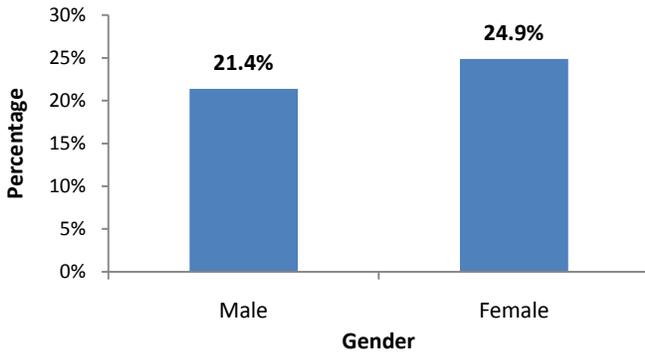


Leisure Time Physical Activity by Specific Subpopulations



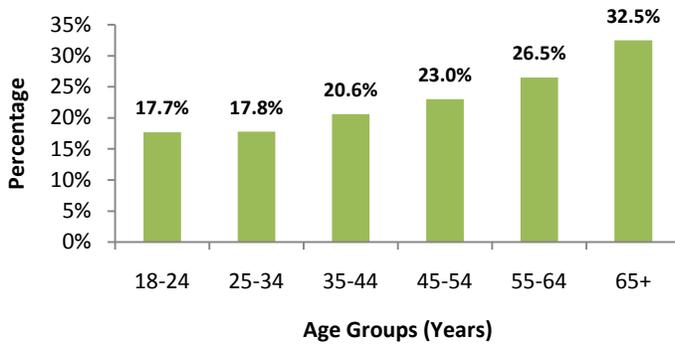
- About 30% of the African-American and 22% of the White adults do not participate in leisure time physical activity.
- Almost 31% of the Hispanic adults do not participate in leisure time physical activity.

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



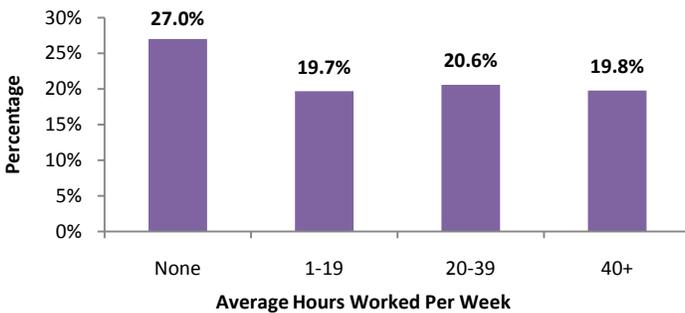
- About 1 in 5 adult males (21.4%, 95% Confidence Interval (CI): 20.1-22.6) and 1 in 4 females (24.9%, 95% CI: 23.8-25.9), does not participate in leisure time physical activity.
- The percentage of females not participating in leisure time physical activity is significantly higher than the percentage of males.

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



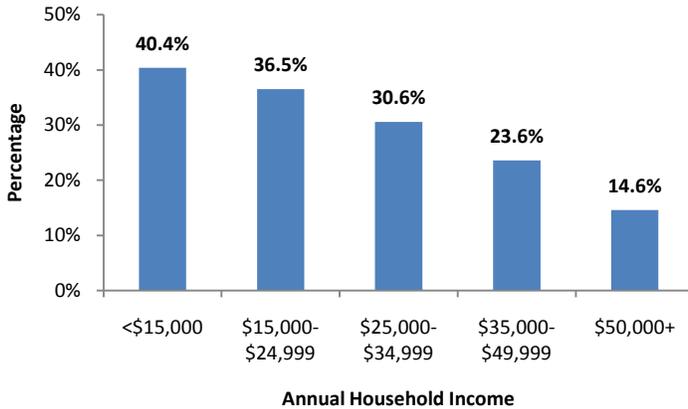
- Almost 1 in 3 adults age 65 years and older (32.5%) does not participate in leisure time physical activity.
- Percentage of adults not participating in leisure time physical activity is significantly higher for older adults (55-64 years: 26.5%, 95% CI: 25.0-28.0; 65+ years: 32.5%, 95% CI: 31.2-33.8) as compared to younger adults (18-24 years: 17.7%, 95% CI: 14.0-21.4; 25-34 years: 17.8%, 95% CI: 15.7-19.9).

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



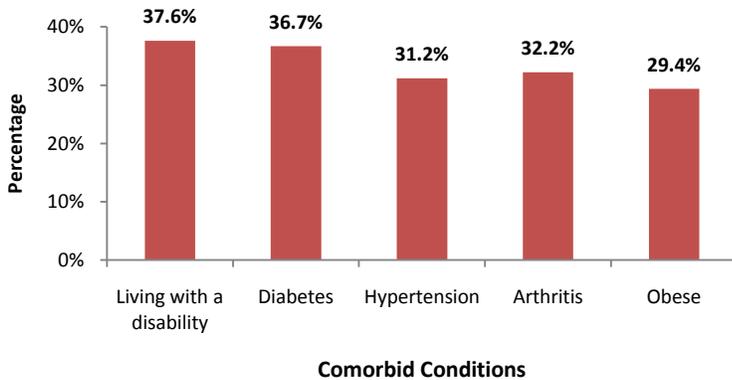
- Among adults who do not work any hours per week at a job or business, 27% do not participate in leisure time physical activity.

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



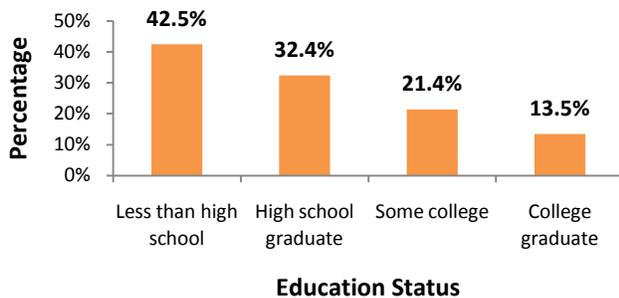
- Percentage of adults not participating in leisure time physical activity is high among adults with a lower annual household income.
- About 2 in 5 adults (40.4%) with an annual household income less than \$15,000 do not participate in leisure time physical activity.

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



- Percentage of non-participation in leisure time physical activity is high among adults with co-morbid conditions.
- More than 1 in 3 adults living with a disability (37.6%) or having diabetes (36.7%) does not participate in leisure time physical activity.
- About 1 in 3 adults with hypertension (31.2%), arthritis (32.2%) or obesity (29.4%) does not participate in leisure time physical activity.

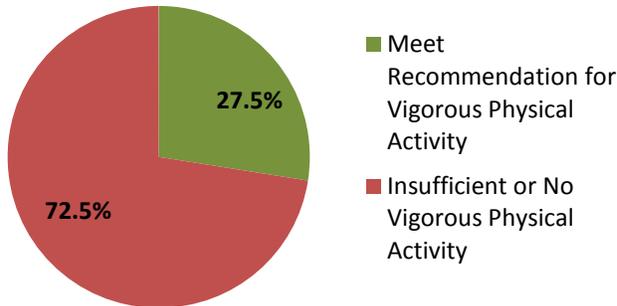
Percentage of Adults Who Do Not Participate in Leisure Time Physical Activity by Education Status



- About 2 in 5 adults with less than high school education (42.5%) 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 (42.5%, 95% CI: 38.3-46.8) as compared to those with college or more education (13.5%, 95% CI: 12.5-14.4).

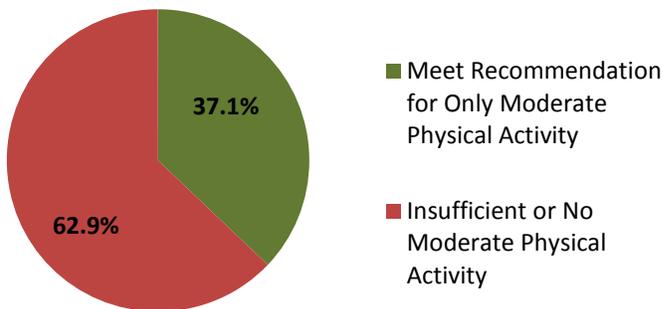
Vigorous & Moderate Physical Activity

Vigorous Physical Activity Level



- **Meet Recommendation for Vigorous Physical Activity:** About 27.5% of adults participate in vigorous physical activity.
- **Insufficient or No Vigorous Physical Activity:** 72.5% do not meet recommendations for vigorous physical activity.

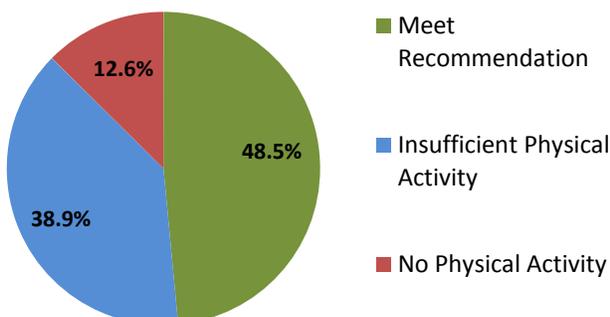
Moderate Physical Activity Level



- **Meet Recommendation for Moderate Physical Activity:** 37.1% of adults meet recommendations for moderate physical activity.
- **Insufficient or No Moderate Physical Activity:** About 2 in 3 adults (62.9%) either do insufficient or no moderate physical activity.

Physical Activity Levels

Physical Activity Levels



- **Meet Recommendation for Physical Activity:** Just under half (48.5%) of adults meet recommendations for physical activity.
- **Insufficient Physical Activity:** About 2 in 5 (38.9%) adults do insufficient physical activity.
- **Inactive:** 12.6% of adults report no physical activity.

Summary

About one-fourth (23.1%) of 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. 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 African-Americans, Hispanics and adults who do not work.

With regard to current recommendation for physical activity (moderate physical activity 30 minutes or more per day, 5 or more days per week or vigorous physical activity 20 minutes or more per day, 3 or more days per week), the 2009 Kansas BRFSS data showed that less than half of adults meet this recommendation for physical activity.

The Healthy People 2010 target for the physical activity objective is to increase the proportion of adults who engage regularly, preferably daily, in moderate physical activity for at least 30 minutes per day by 50%. As only 37% of adults in Kansas are engaged in the recommended amount of moderate physical activity, further public health efforts are needed to reach the target in Kansas.

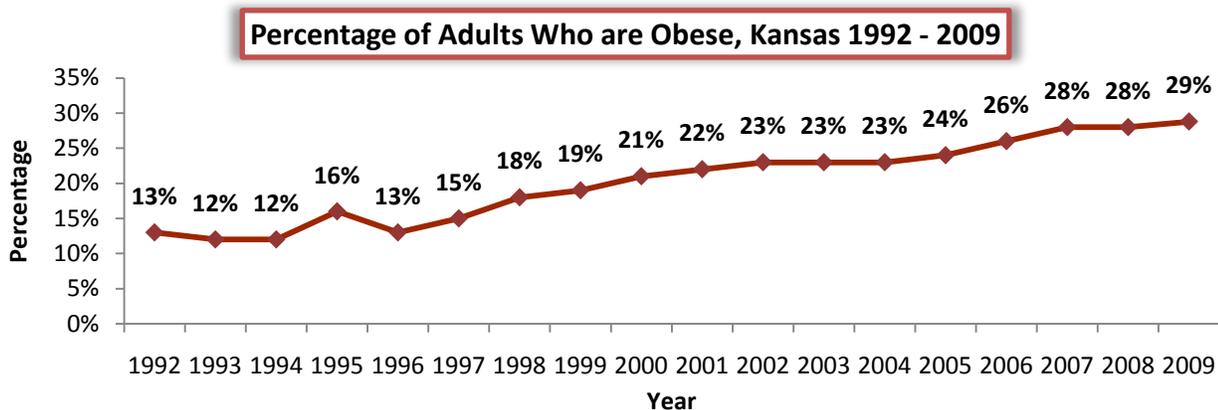
Obesity

Leading Health Indicator
Obesity
2009 Kansas BRFSS

Population assessment of obesity prevalence is done by calculating Body Mass Index (BMI). Categories of BMI indicate ranges of body weight.⁴ Obesity has physical, psychological, and social consequences in adults.⁵ Health risks of obesity include coronary heart disease, stroke, hypertension, dyslipidemia, arthritis and type-2 diabetes.^{5, 6} Apart from physical ailments, people suffering from obesity also face psychological problems including depression, appearance consciousness, and lack of selfconfidence.⁷

Weight Status Categories (based on BMI)

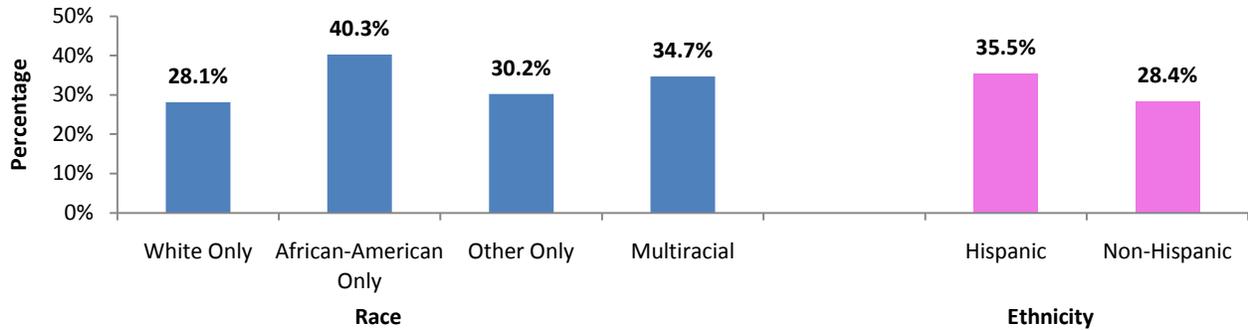
- **Normal/Underweight:** BMI less than 25 kg/m²
- **Overweight:** BMI 25 kg/m² to less than 30 kg/m²
- **Obese:** BMI equal to or more than 30 kg/m²



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 13% in 1992, it has reached 29% in 2009, representing an increase in obesity prevalence that has doubled in the last 17 years.

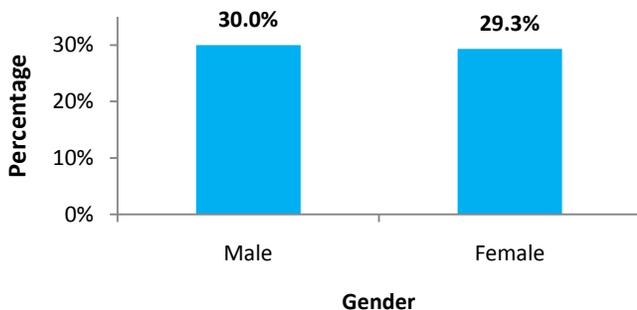
Obesity by Specific Subpopulations

Prevalence of Obesity by Race and Ethnicity



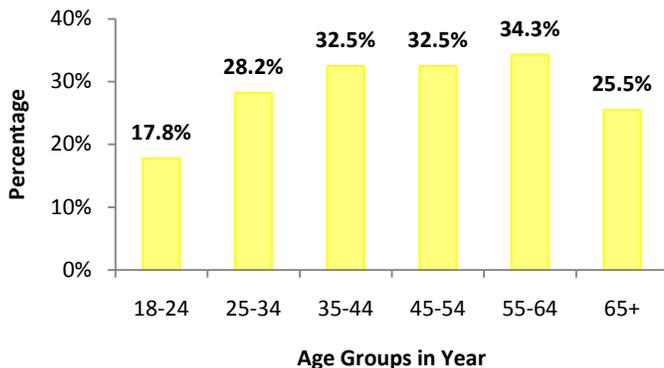
- Prevalence of obesity is significantly higher among African-Americans (40.3%, 95% CI: 35.1-45.5) as compared to whites (28.1%, 95% CI: 27.1-29.0).
- About 1 in 3 (35.5%, 95% CI: 30.6-40.4) Hispanic adults and 1 in 4 (28.4%, 95% CI: 27.5-29.3) non-Hispanic adults are obese. A significantly higher percentage of Hispanic adults are obese as compared to non-Hispanic adults.

Prevalence of Obesity by Gender

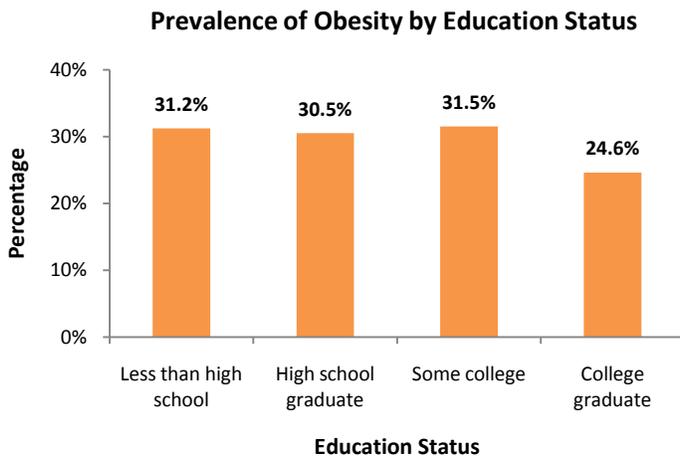


- About, 30% (95% CI: 28.6-31.5) of males and 29.3% (95% CI: 26.4-28.6) of females are obese.
- Prevalence of obesity does not vary statistically by gender.

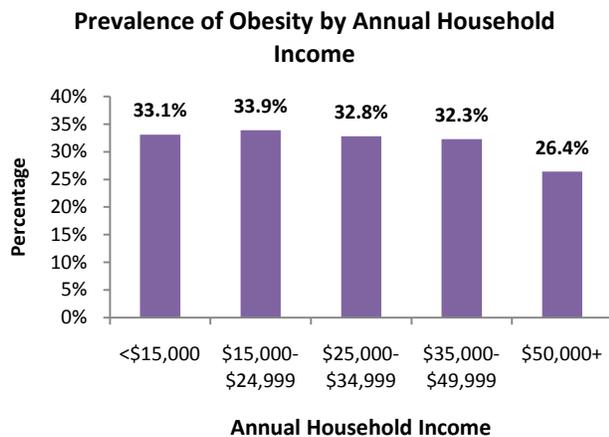
Prevalence of Obesity by Age Groups



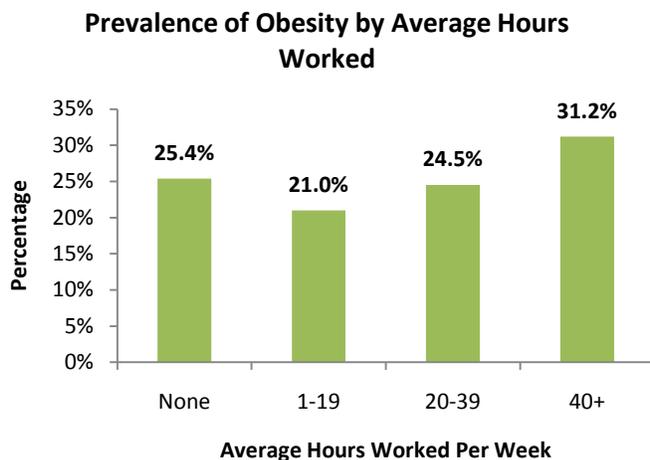
- About 1 in 3 adults ages 35-44 years, 45-54 years and 55-64 years is obese.
- 1 in 4 adults (25.5%) ages 65 years and older is obese.



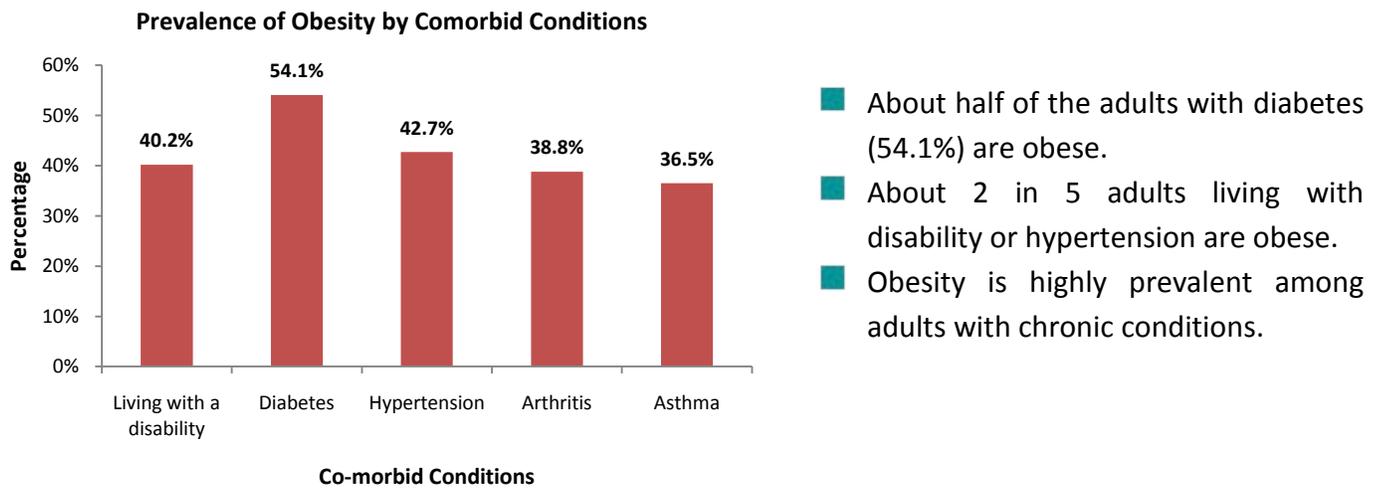
- Adults with college or higher level education (24.6%, 95% CI: 23.3-25.9) have significantly lower prevalence of obesity as compared to other education status categories (less than high school: 32.1%, 95% CI: 27.2-35.3; High school graduate: 30.5%, 95% CI: 28.7-32.3; some college: 31.5%, 95% CI: 25.9-34.5).



- About 1 in 3 adults in all categories of annual household income, except \$50,000 or more, are obese; 1 in 4 adults with an annual household income greater than or equal to \$50,000 is obese.
- There is no statistical difference in the prevalence of obesity among adults with different household income levels.



- About 1 in 3 adults (31.2%) who worked 40 or more hours per week at a job or business is obese.



Summary

In Kansas, prevalence of obesity has constantly accelerated over the last 17 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 and Hispanics. Adults whose annual household income is less than \$50,000 and adults who have other chronic conditions such as diabetes, hypertension or living with a disability 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 is to reduce the proportion of adults who are obese to 15%. As 29% of adults in Kansas are obese, further public health efforts are needed to reach the target in Kansas.

Tobacco Use

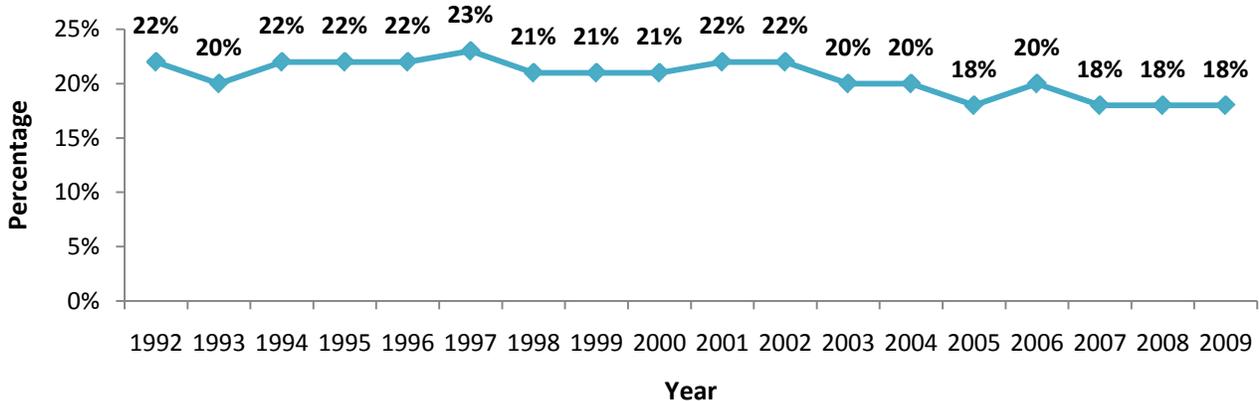
Leading Health Indicator

Tobacco Use

2009 Kansas BRFSS

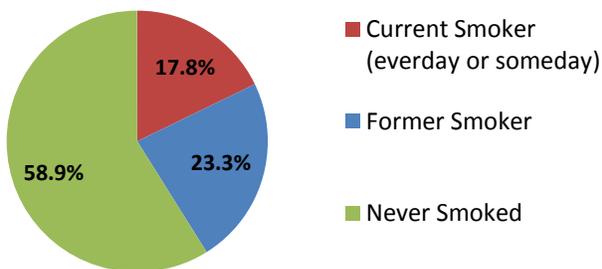
Tobacco use is one of the most preventable causes of morbidity and mortality.⁸ More deaths are caused each year by tobacco use than by all deaths from human immunodeficiency virus (HIV), illegal drug use, alcohol use, motor vehicle injuries, suicides, and homicides combined.^{9,10} Reducing the prevalence 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.¹¹ At present, nearly 40 diseases or causes of death are known to be positively associated with cigarette smoking.¹² Smoking causes many types of cancers including lung cancer, coronary heart disease, stroke, peripheral vascular disease, emphysema, bronchitis, chronic airway obstruction etc.¹³ Cigarette smoking has many adverse reproductive and early childhood effects, including increased risk for infertility, stillbirth, low birth weight etc.¹³

Percentage of Current Smokers, Kansas 1992 - 2009



2009 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.

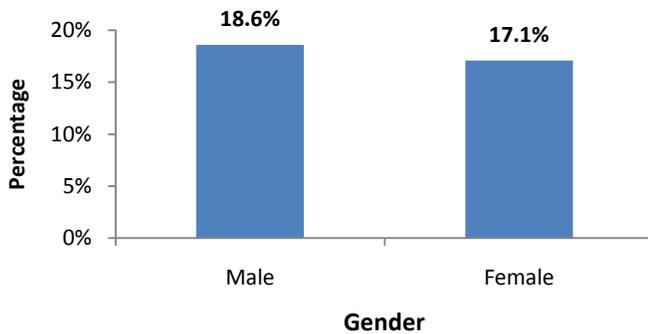
Percentage of Adults by Smoking Status



- About 1 in 6 adults (17.8%) currently smokes cigarettes.
- About 1 in 4 adults (23.3%) is a former smoker.
- About 60% of adults have never smoked.
- More than half of current smokers (53.9%) tried to quit smoking for one day or longer in the past year.

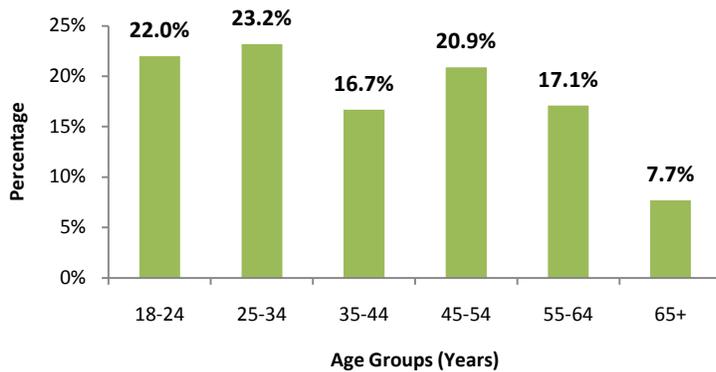
Current Smoking by Specific Subpopulations

Prevalence of Current Smoking by Gender



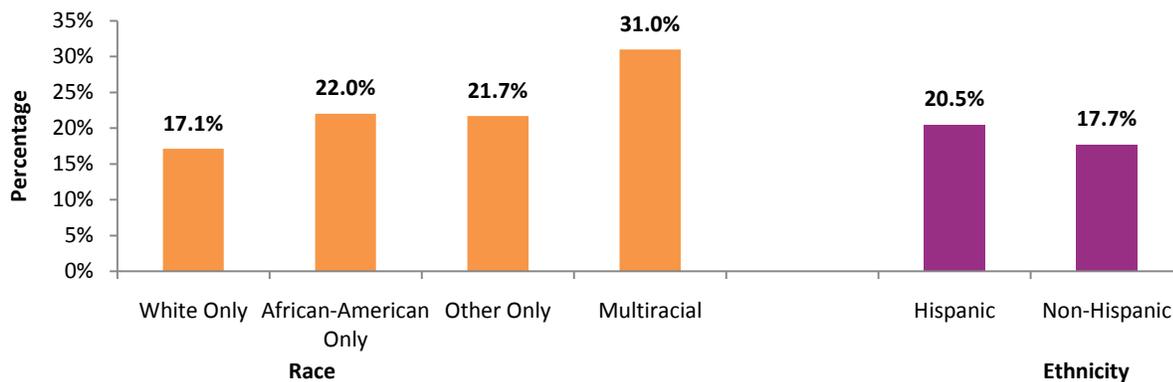
- About 1 in 5 adult males (18.6%, 95% CI: 17.3-19.9) and females (17.1%, 95% CI: 16.1-18.1) currently smokes cigarettes.
- The prevalence of current smoking does not vary significantly between males and females.

Prevalence of Current Smoking by Age Groups



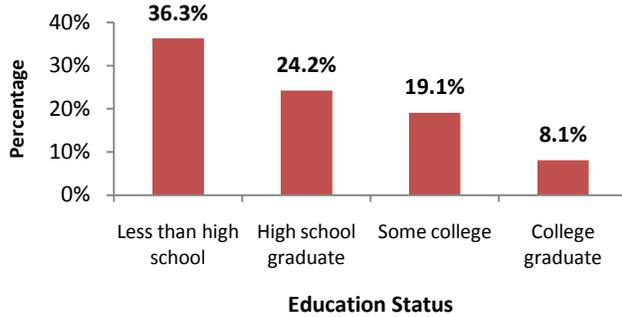
- About 1 in 4 adults ages 25-34 years currently smokes cigarettes.
- Prevalence of current smoking is higher among younger age groups (18-24 years: 22.0%, 95% CI: 18.0-26.1; 25-34 years: 23.2%, 95% CI: 20.8-25.5) as compared to prevalence of current smoking among adults 65 years and older (7.7%, 95% CI: 7.0-8.5).

Prevalence of Current Smoking by Race and Ethnicity



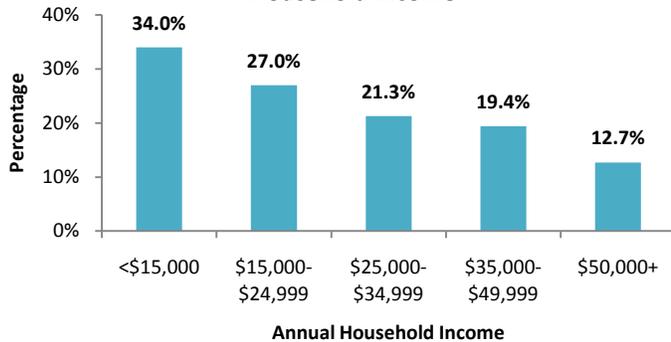
- Almost 1 in 3 multiracial adults currently smokes cigarettes (31.0%, 95% CI: 22.9-39.1).
- One in four Hispanics and 1 in 6 non-Hispanics currently smokes cigarettes.

Prevalence of Current Smoking by Education Status



- About 36.3% (95% CI: 32.0-40.5) adults with less than high school education currently smoke cigarettes.
- About 8.1% (95% CI: 7.2-8.9) 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

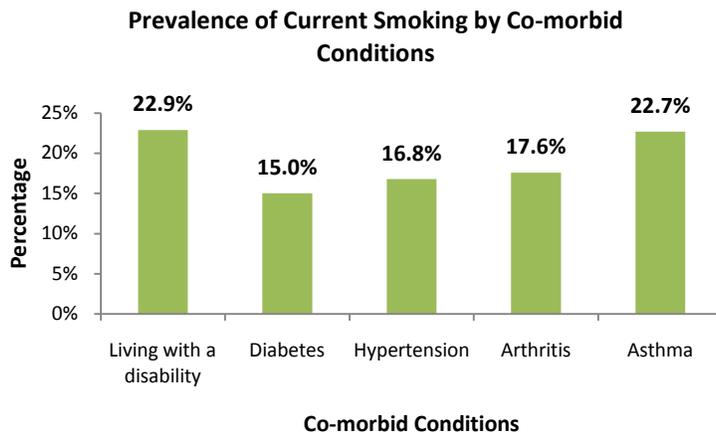


- Prevalence of current smoking is high among the lower income population.
- About 1 in 3 adults (34%, 95% CI: 29.6-38.3) whose annual household income is less than \$15,000 currently smoke as compared to 12.7% (95% CI: 11.6-13.7) of adults whose annual household income is equal to or more than \$50,000.

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: 18.0%, 95% CI: 15.5-20.5; 40+ hours/week: 17.9%, 95% CI: 16.7-19.1).



- About 1 in 5 adults living with a disability (22.9%) or with current asthma (22.7%) currently smokes cigarettes.
- About 1 in 6 adults with diabetes (15%), hypertension (16.8%) or arthritis (17.6%) currently smokes cigarettes.

Summary

The prevalence of current smoking is 17.8%. 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 54% of current smokers have tried to quit smoking for one day or longer in the past year.

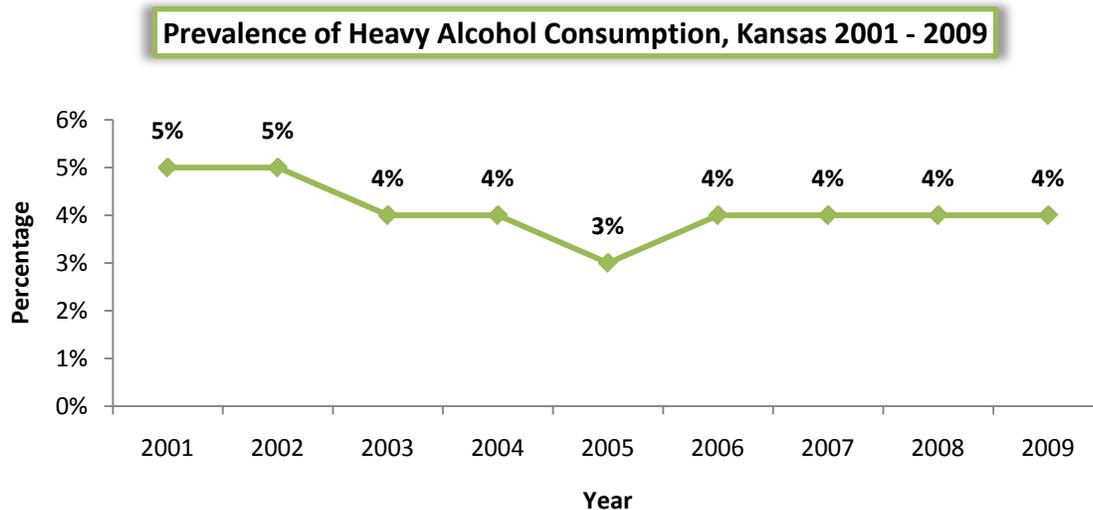
The Healthy People 2010 target for the tobacco use objective is to reduce cigarette smoking among adults to 12%. As 18% of adults in Kansas are current cigarette smokers, further public health efforts are needed to reach the target in Kansas.

Substance Abuse: Alcohol

Alcohol consumption is the third leading preventable cause of death in the United States.¹⁴ Alcohol abuse is generally measured by two types of alcohol consumption pattern, binge and heavy drinking. Binge drinking is associated with alcohol poisoning, unintentional injuries, suicide, hypertension, pancreatitis, sexually transmitted diseases, and meningitis, among other disorders. 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 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, and a variety of social problems.¹⁶

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

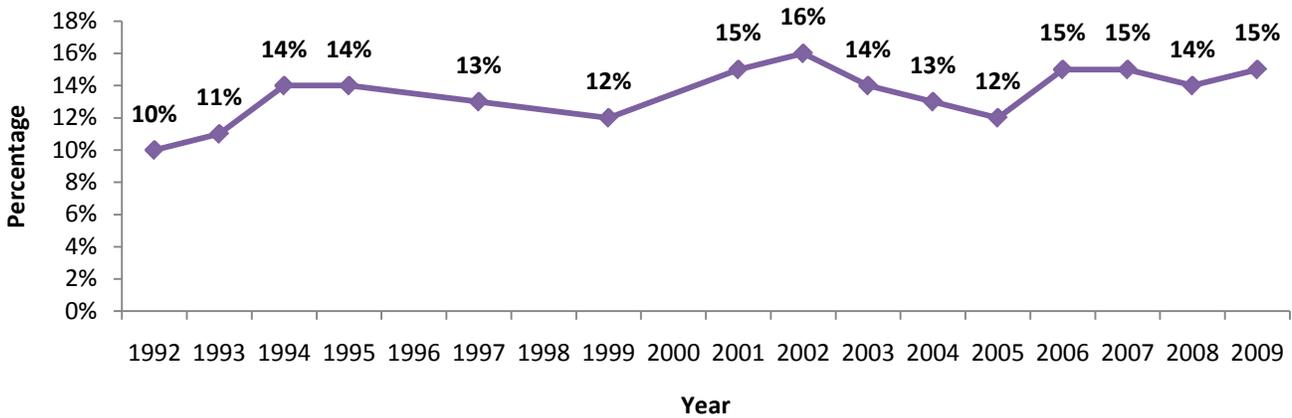
Heavy Alcohol Consumption: Heavy alcohol consumption is defined as adult men having more than two drinks per day and adult women having more than one drink per day in past 30 days.



- The current prevalence of heavy alcohol consumption is 4%. The prevalence of heavy drinking remained consistent over the past decade.

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.

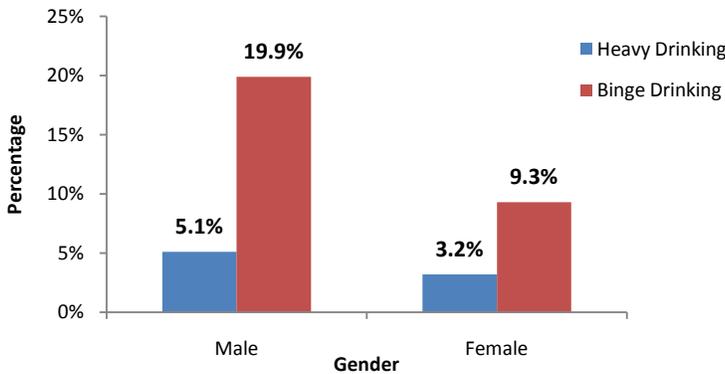
Prevalence of Binge Drinking, Kansas 1992 - 2009



- The current prevalence of binge drinking is 15%. The prevalence of binge drinking has remained relatively stable over the last 10 years.

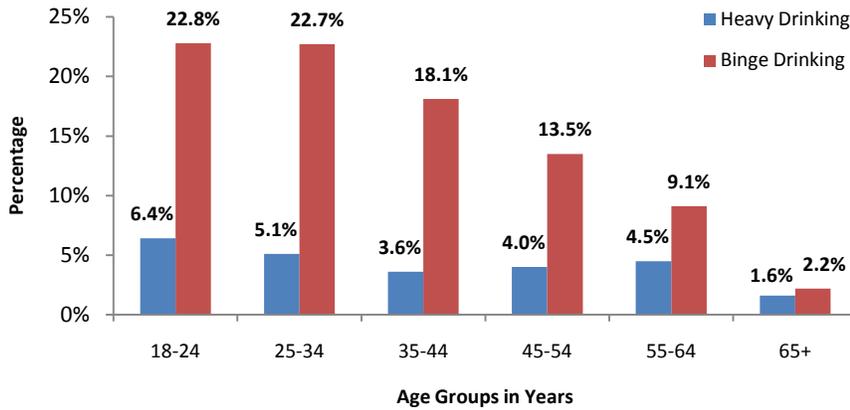
Heavy Alcohol Consumption and Binge Drinking by Specific Subpopulations

Heavy Drinking and Binge Drinking by Gender



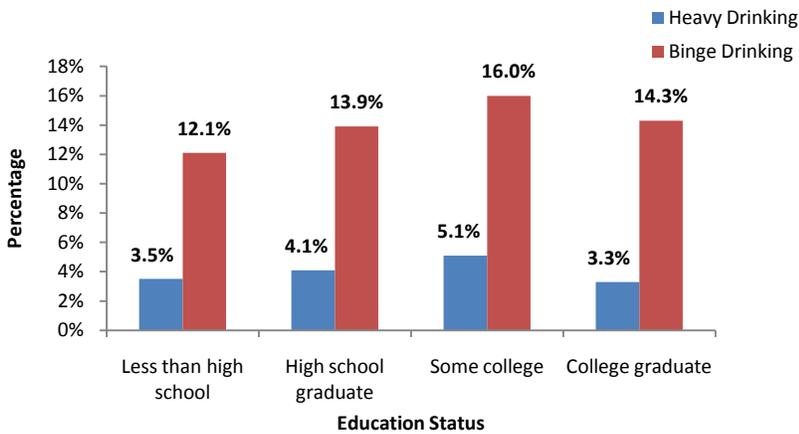
- The prevalence of binge drinking among males is 19.9% (95% CI: 18.6-21.3) and the prevalence of heavy drinking among males is 5.1% (95% CI: 4.3-5.9).
- The prevalence of binge drinking among females is 9.3% (95% CI: 8.5-10.2) and the prevalence of heavy drinking among females is 3.2% (95% CI: 2.7-3.6).
- A significantly higher percentage of males are binge drinkers than females. Similarly, a higher percentage of males are heavy drinkers than females.

Heavy Drinking and Binge Drinking by Age Groups



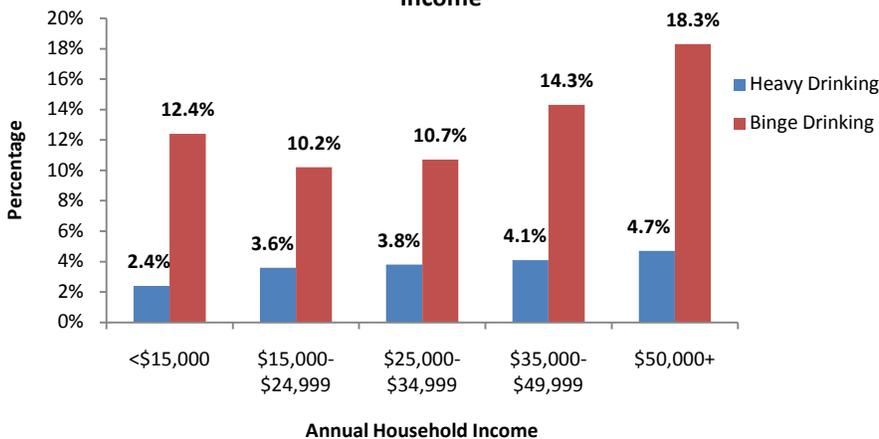
- About 1 in 20 adults (6.4%) in age group 18-24 years engages in heavy drinking.
- About 1 in 5 adults (22.8%) in age group 18-24 years engages in binge drinking.

Heavy Drinking and Binge Drinking by Education Status



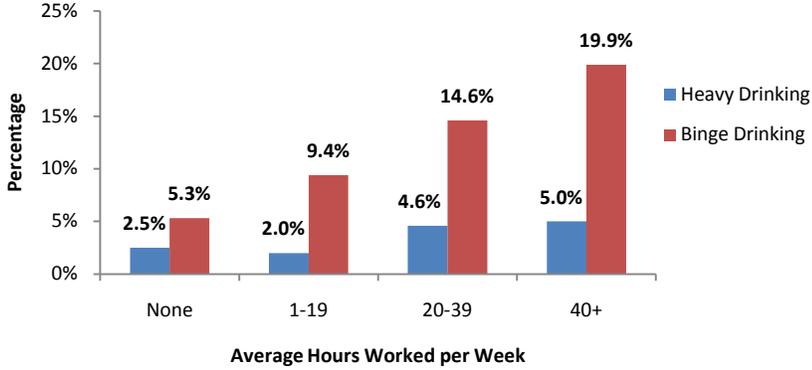
- About 1 in 20 adults (5.1%, 95% CI: 4.1-6.2) with some college education engages in heavy drinking.
- About 3 in 20 adults (16%, 95% CI: 14.3-17.7) with some college education reported engage in binge drinking.
- The prevalence of binge drinking and heavy drinking prevalence does not vary by education status.

Heavy Drinking and Binge drinking by Annual Household Income



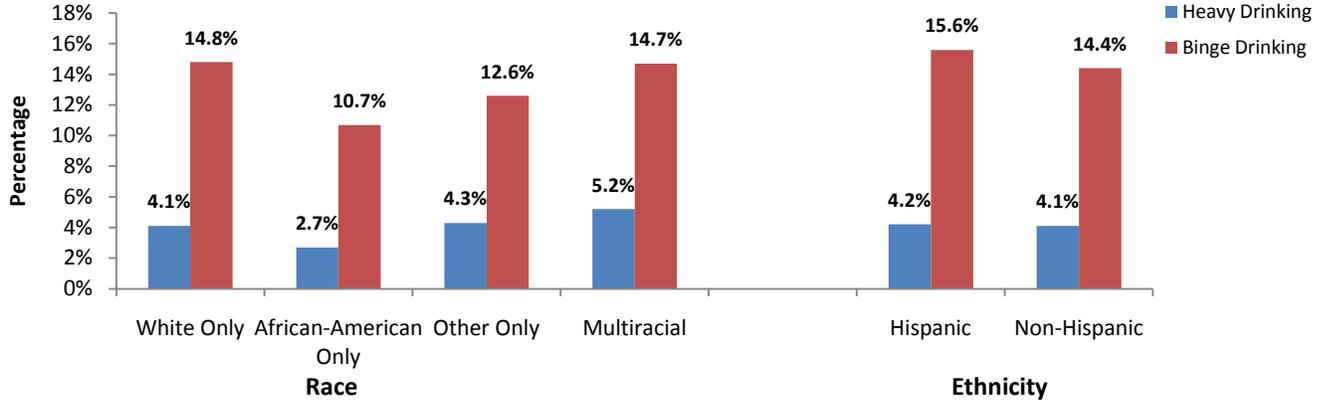
- Adults with an annual household income of \$50,000 or more have significantly higher binge drinking (18.3%, 95% CI: 17.0-19.6) and heavy drinking (4.7%, 95% CI: 4.0-5.5) prevalence as compared to adults with an annual household income of less than \$15,000 (12.4%, 95% CI: 8.5-16.4; 2.4%, 95% CI: 1.0-3.7, respectively).

Heavy Drinking and Binge Drinking by Average Hours Worked per Week



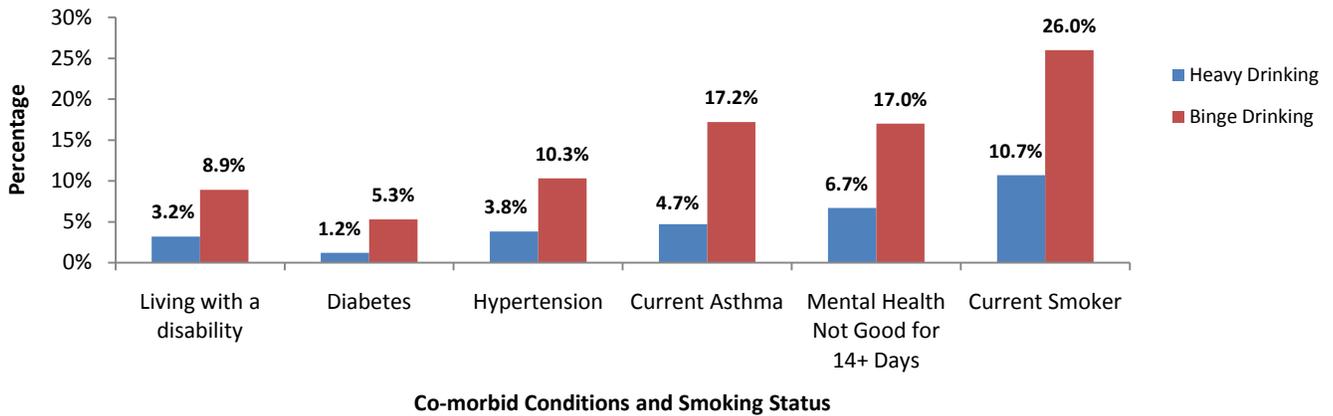
■ Adults who worked 40 hours or more per week have highest prevalence of both binge (19.9%, 95% CI: 18.6-21.1) and heavy drinking (5%, 95% CI: 4.3-5.7).

Heavy Drinking and Binge Drinking by Race & Ethnicity



- About 3 in 20 White adults (14.8%) and 3 in 20 Hispanic adults (15.6%) engage in binge drinking.
- Both binge drinking and heavy drinking does not vary statistically either by race or ethnicity.

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



- More than 1 in 4 current smokers (26%) and about 1 in 6 adults (17%) 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 (10.7%) and about than 1 in 20 adults (6.7%) 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 2009, prevalence of heavy drinking was 4% and binge drinking was 15%. Males and younger age groups have a significantly higher prevalence of binge and heavy drinking as compared to their counterparts. Both binge drinking and heavy drinking prevalence increases with an increase in annual household income. Adults who work 40 hours or more per week have significantly higher prevalence of binge drinking as compared to adults who do not work or work less than 40 hours 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 prevalences of binge drinking.

The Healthy People 2010 target for the substance abuse objective is 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

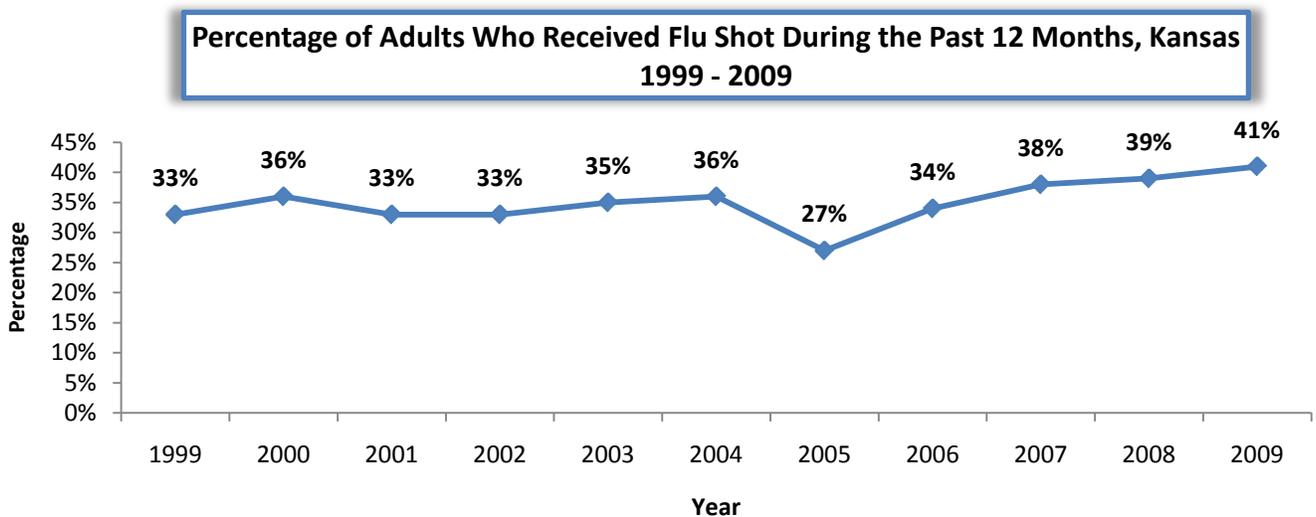
Immunization

2009 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.²³

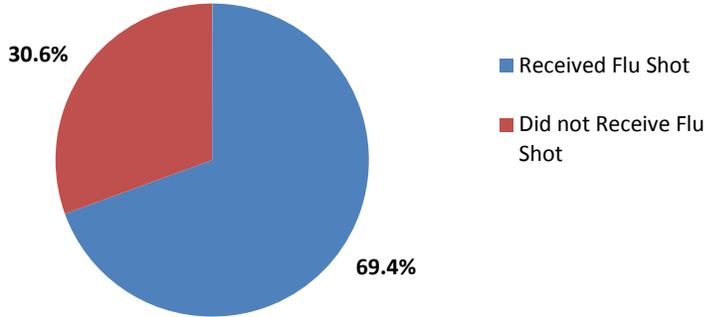
Pneumonia is an infection of the lungs usually caused by bacteria or viruses that can cause mild to severe illness in people of all ages. Signs of pneumonia can include coughing, fever, fatigue, nausea, vomiting, rapid breathing or shortness of breath, chills, or chest pain. High risk population includes 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.²⁴ People of age 65 years and older are recommended to receive one dose 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. are recommended to receive a 1-time revaccination 5 years or more after 1st dose.²⁵

The 2009 BRFSS collected data on seasonal influenza vaccination and pneumococcal vaccination among adults 18 years and older.



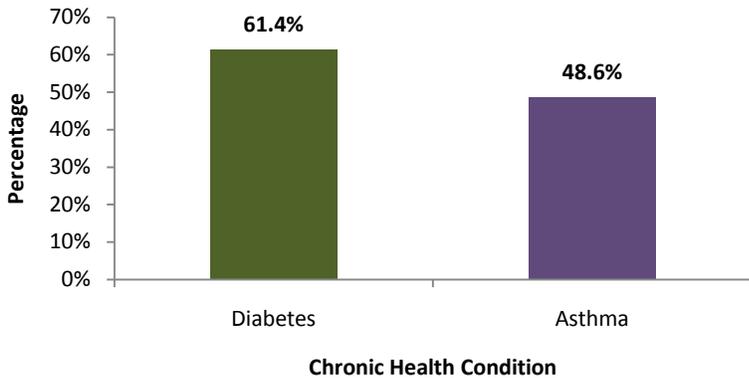
- 41.1% of adults 18 years and older received a seasonal flu shot within the past 12 months.
- The percentage of adults receiving seasonal flu shot has steadily increased during past few years.

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



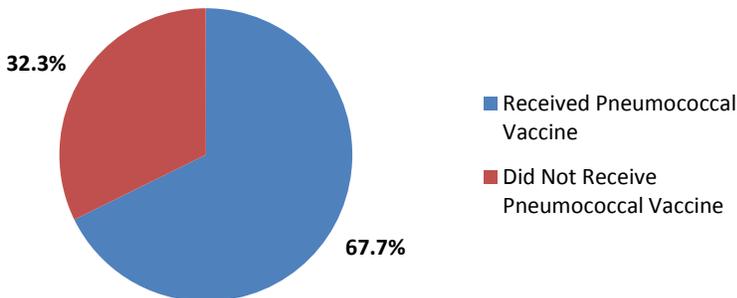
- Almost 7 in 10 adults 65 years and older (69.4%) received seasonal flu shot during the past 12 months.

Percentage of Adults with Chronic Health Conditions Who Received Flu Shot During the Past 12 Months



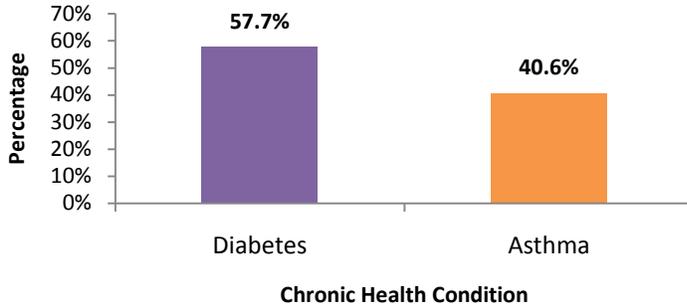
- Almost half of adults with current asthma (48.6%) received a seasonal flu shot during the past 12 months.
- About 6 in 10 adults with diabetes (61.4%) received a seasonal flu shot during the past 12 months.

Percentage of Adults 65 Years and Older Who Received Pneumococcal Vaccine



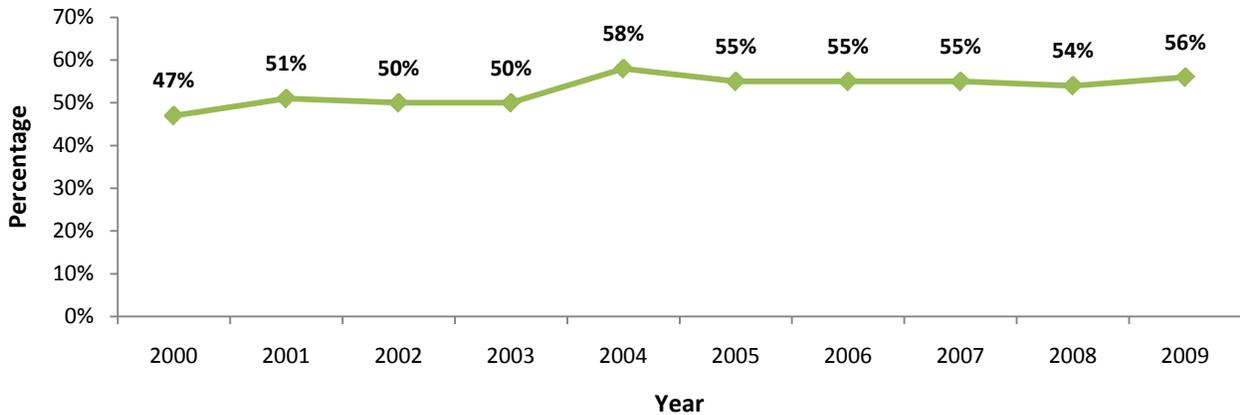
- Adults 65 years and older are at higher risk for acquiring pneumococcal infection than the rest of the population.
- About 2 in 3 adults 65 years and older (67.7%) ever received pneumococcal vaccine.

Percentage of Adults with Chronic Health Conditions Who Received Pneumococcal Vaccine



- Adults with chronic health conditions like diabetes and asthma are at high risk for acquiring pneumococcal infection.
- About 4 in 7 adults with diabetes (57.7%) and 2 in 5 adults with current asthma (40.6%) ever received pneumococcal vaccine.

Percentage of At Risk Adults Who Ever Received Pneumococcal Vaccine, Kansas 2000 - 2009



- At risk adults included in above chart 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 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) ever received pneumococcal vaccine.

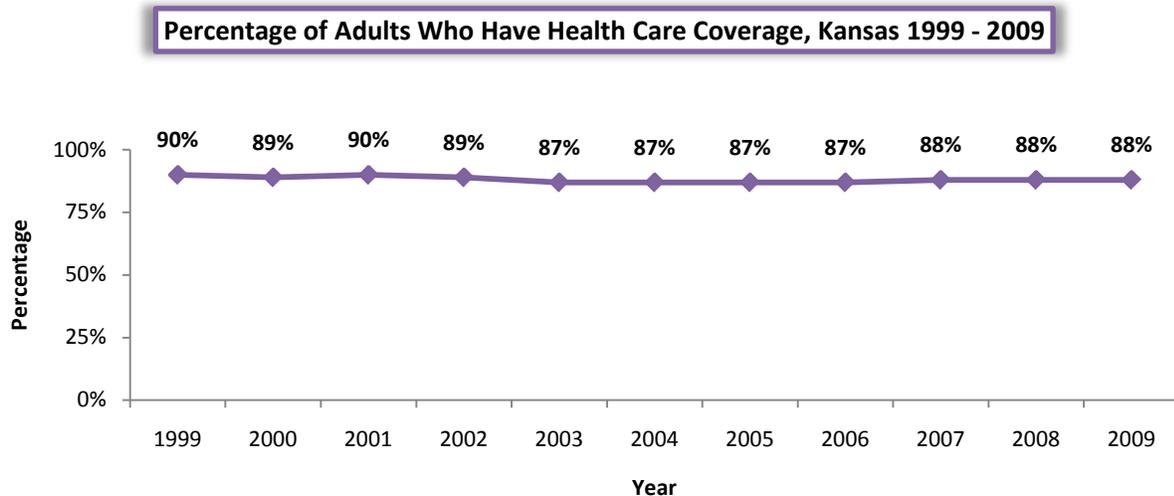
Among adults 65 years and older, 7 in 10 adults (69.4%) received seasonal flu shot during the past 12 months and 2 in 3 adults (67.7%) ever received pneumococcal vaccine.

The Healthy People 2010 target is 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 is 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 in adults age 65 years and older become vaccinated.

Access to Health Care

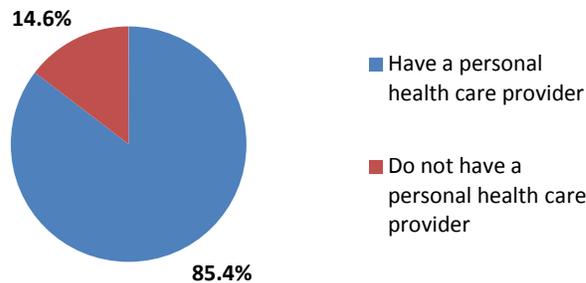
For many, lack of health care is a persistent barrier to good health.²⁶ Access is frequently used to describe a broad set of concerns centering on the degree to which people are able to obtain needed services from the healthcare system. The United States Institute of Medicine (IOM) defined access as 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.²⁷

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



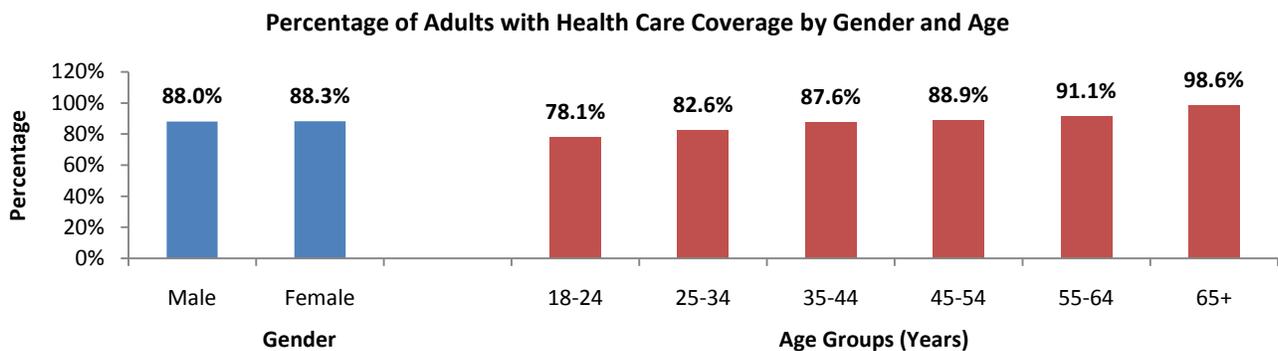
- Almost 9 out of 10 adults 18 years and older (88%) have some kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare.
- The percentage of adults having some type of health care coverage has remained consistent since 1999.

Percentage of Adults Who Have Personal Health Care Provider



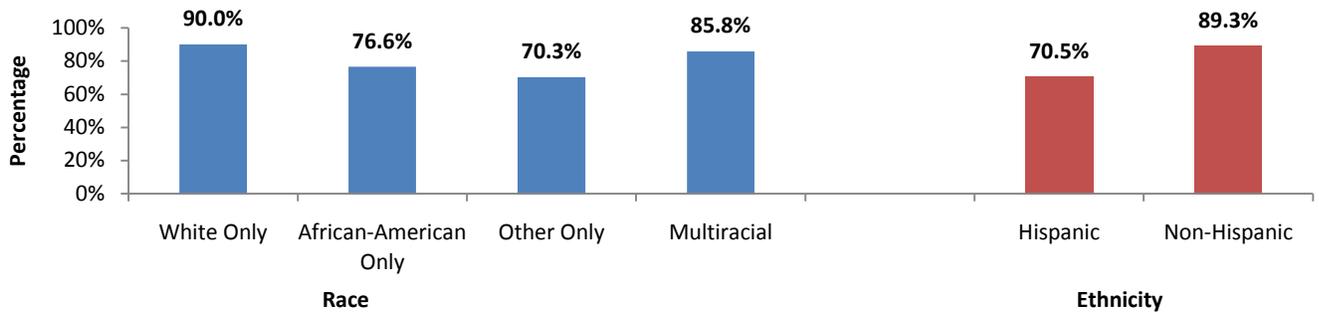
- More than 8 in 10 adults (85.4%) have one or more person(s) as their personal doctor or health care provider.
- About 1 in 7 adults (14.6%) does not have any one that they think of as their personal doctor or health care provider.

Health Care Coverage by Specific Subpopulations



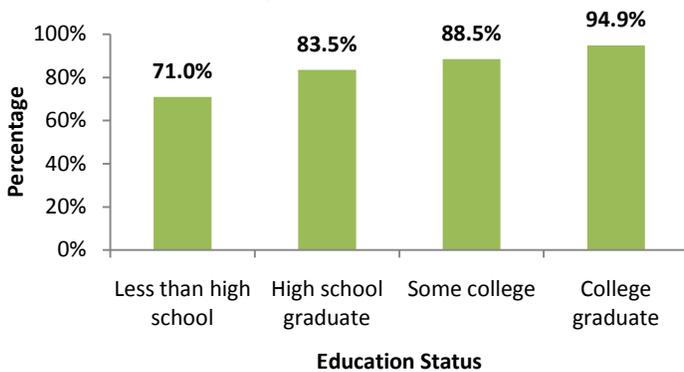
- About 9 in 10 males (88.0%) and females (88.3%) have health care coverage.
- Health care coverage increases with an increase in age. Percentage of health care coverage among 18-24 years old adults (78.1%, 95% CI: 74.1-82.2) is significantly lower than that of 35 years and older adults (35-44: 87.6%, 95% CI: 86.1-89.1; 45-54: 88.9%, 95% CI: 87.8-90.0; 55-64: 91.1%, 95% CI: 90.2-92.0; 65+: 98.6%, 95% CI: 98.2-98.9).

Percentage of Adults with Health Care Coverage by Race and Ethnicity



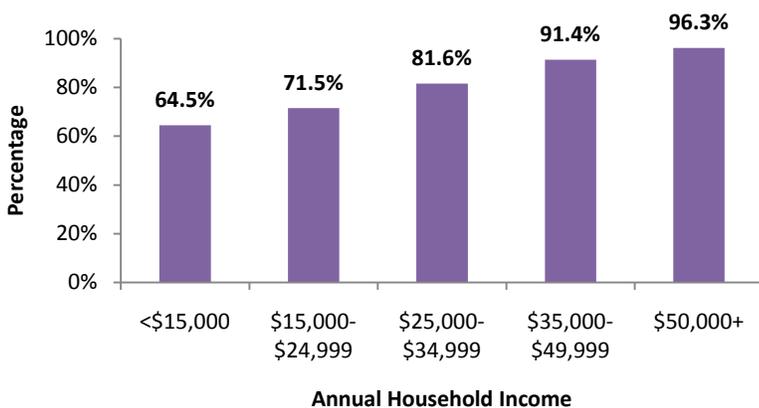
- A significantly lower percentage of Hispanics have health care coverage (70.5%, 95%CI: 66.0-75.1) as compared to non-Hispanics (89.3%, 95% CI: 88.5-90.0).
- A significantly lower percentage of African-Americans (76.6%, 95% CI: 71.8-81.4) and ‘other’ (70.3%, 95% CI: 65.9-74.6) race adults have health care coverage as compared to Whites (90%, 95% CI: 89.2-90.7).

Percentage of Adults with Health Care Coverage by Education Status



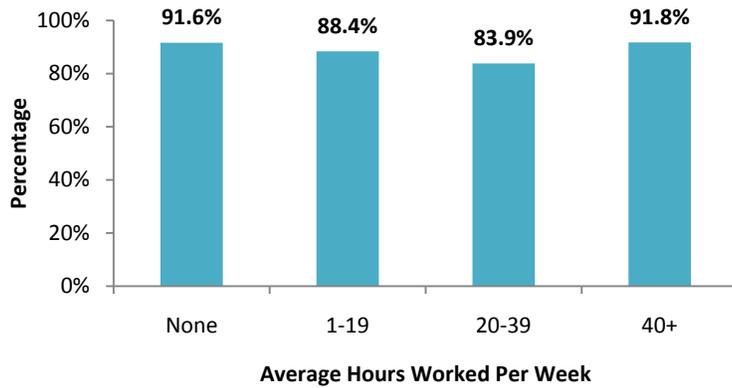
- About 7 in 10 adults (71%, 95% CI: 66.9-75.2) with less than high school education have health care coverage as compared to more than 9 in 10 adults (94.9%, 95% CI: 94.1-95.7) with college or higher level education.
- Percentage of adults with health care coverage increases significantly with an increase in education status.

Percentage of Adults with Health Care Coverage by Annual Household Income



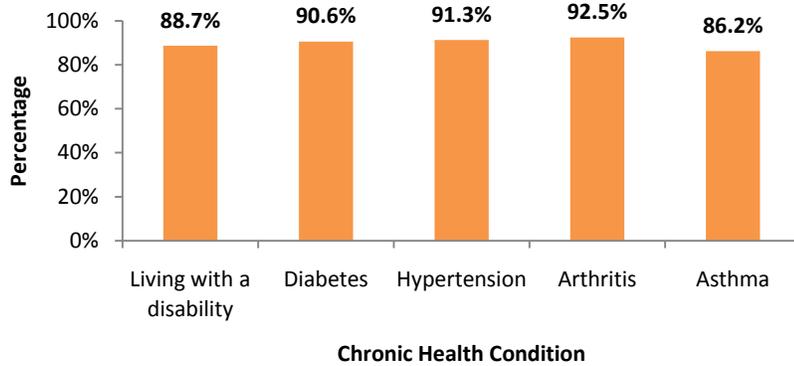
- About 6 in 10 adults (64.5%, 95% CI: 59.8-69.2) with annual household income less than \$15,000 have health care coverage as compared to more than 9 in 10 adults (96.3%, 95% CI: 95.6-97.1) with annual household income \$50,000 or more.
- Percentage of adults with health care coverage increases significantly 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 (91.8%) have health care coverage.

Percentage of Adults with Health Care Coverage by Chronic Health Condition

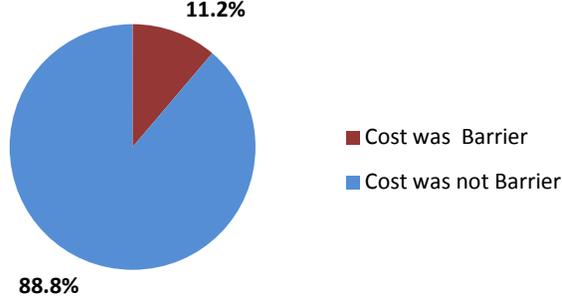


- About 9 in 10 adults with chronic health conditions like diabetes, hypertension, arthritis, or asthma have health care coverage.
- About 89% of adults living with a disability have health care coverage.

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.²⁸ High increases in financial burden is seen among those with non-group coverage.²⁸

The 2009 Kansas BRFSS included a question on whether medical cost is a barrier in seeing a health care provider among Kansans.

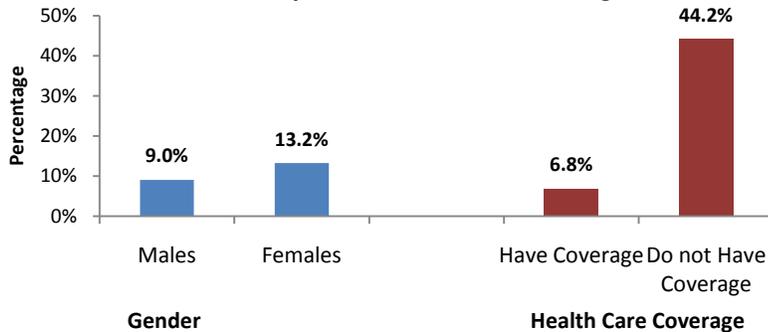
Percentage of Adults Who Could Not See a Doctor Because of Cost



- In the past 12 months, about 1 in 10 adults (11.2%) could not see a doctor when needed because of the cost.

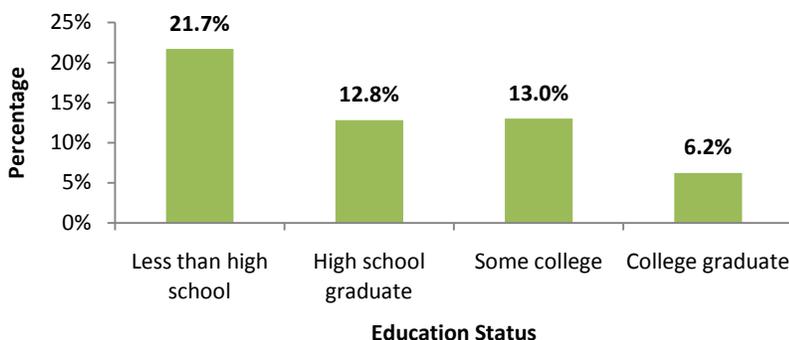
Medical Cost as a Barrier by Specific Subpopulations

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



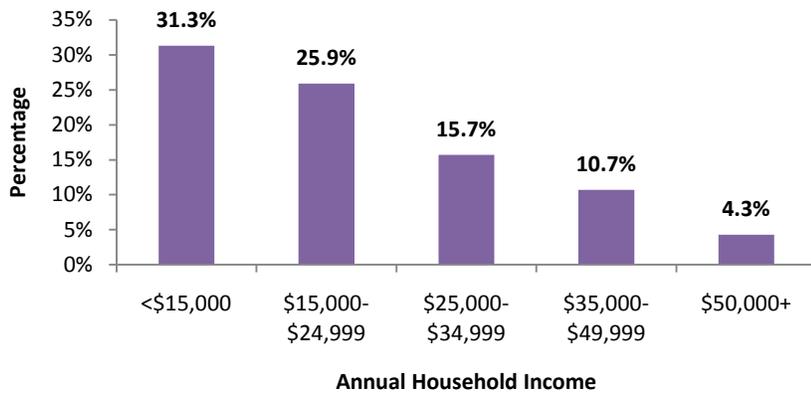
- A significantly higher percentage of females (13.2%, 95% CI: 12.3-14.1) reported that they could not see a doctor in the past 12 months because of the cost as compared to males (9%, 95% CI: 8.1-10.0).
- 1 in 15 adults who have health care coverage (6.8%) could not see a doctor in the past 12 months because of the cost.

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



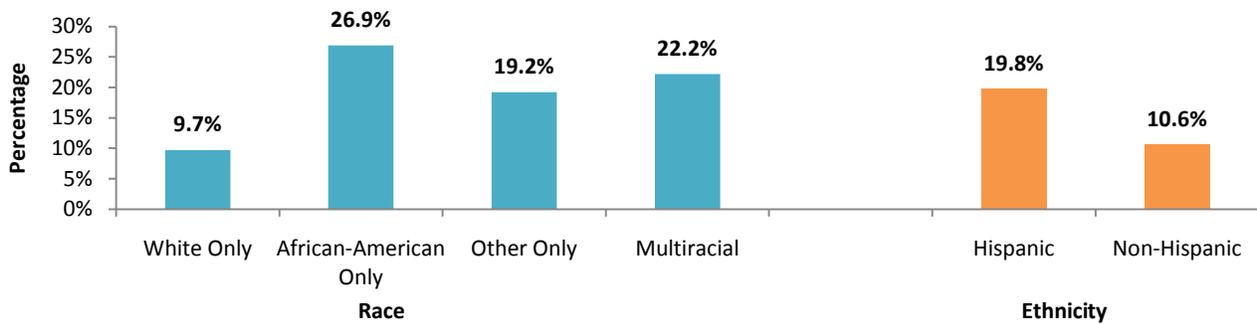
- Almost 1 in 5 adults with less than high school education (21.7%) could not see a doctor in the past 12 months because of the cost.
- Almost 1 in 15 adults with college or higher level of education (6.2%) could not see a doctor in the past 12 months because of the cost.

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 (31.3%, 95% CI: 27.0-35.5) could not see a doctor in the past 12 months because of the cost.
- About 1 in 15 adults with annual household income \$50,000 or more (4.3%, 95% CI: 3.7-4.9) could not see a doctor in the past 12 months because of the cost.
- Medical cost as a barrier to care is significantly higher problem among those with a lower annual household income.

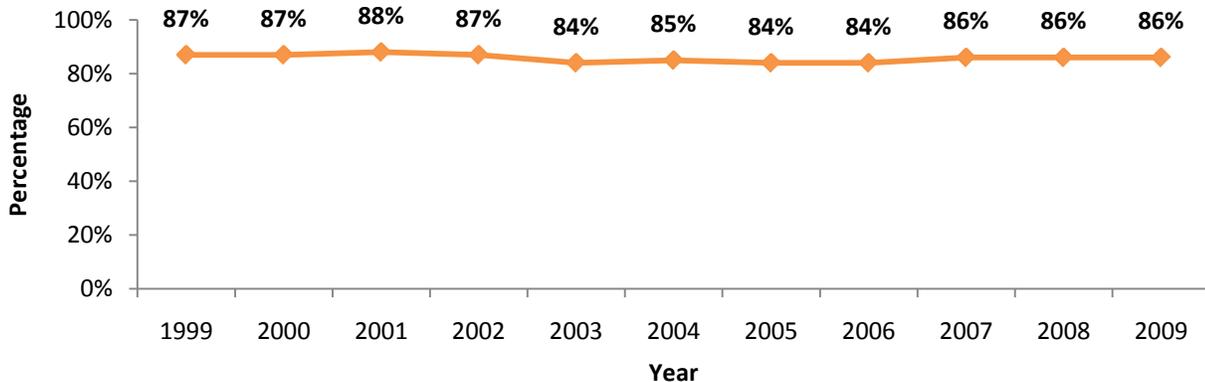
Percentage of Adults Who Could Not See A Doctor Because of Cost by Race and Ethnicity



- A significantly higher percentage of African-American adults (26.9%, 95% CI 21.9-31.9) could not see a doctor in the past 12 months because of the cost as compared to Whites (9.7%, 95% CI 9.0-10.3).
- Almost 1 in 5 Hispanic adults (19.8%) could not see a doctor in the past 12 months because of the cost as compared to 1 in 10 non-Hispanic adults.

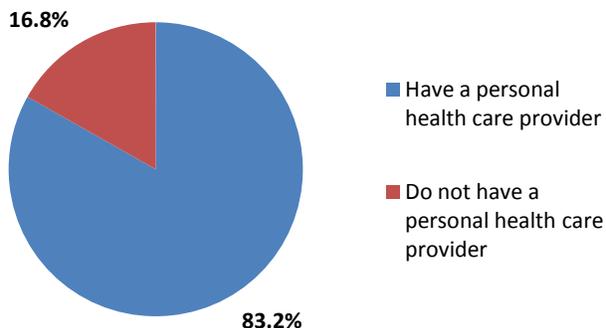
Access to Health Care among Working-Age Adults (18-64 Year Olds):

Percentage of Adults 18 - 64 Years Old Who Have Health Care Coverage, Kansas 1999-2009



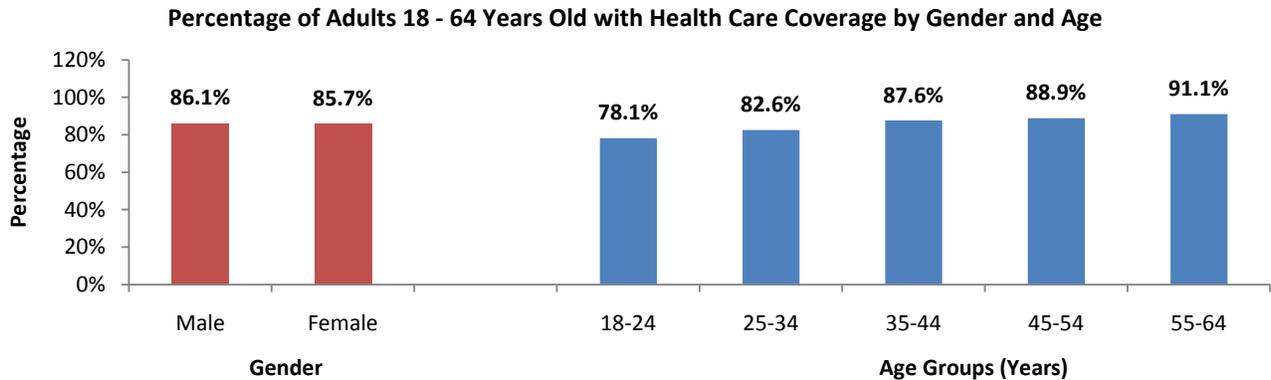
- Less than 9 out of 10 adults 18 – 64 years old (86%) have some kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare.
- The percentage of adults 18-64 years old having some type of health care coverage has remained very consistent since 1999.

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

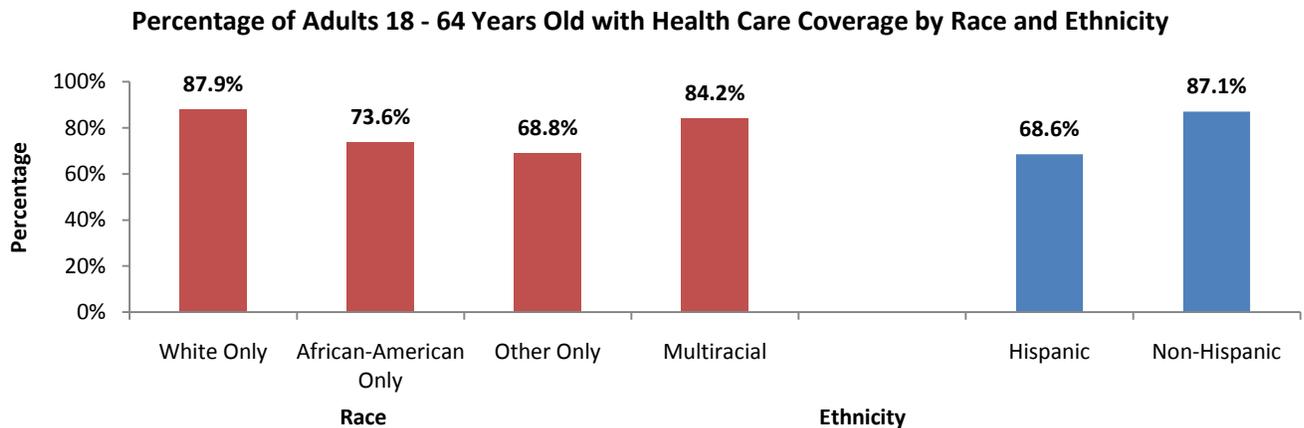


- More than 8 in 10 adults 18-64 years old (83.2%) have one or more person as they think of as their personal doctor or health care provider.
- About 1 in 6 adults (16.8%) does not have a personal doctor or health care provider.

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

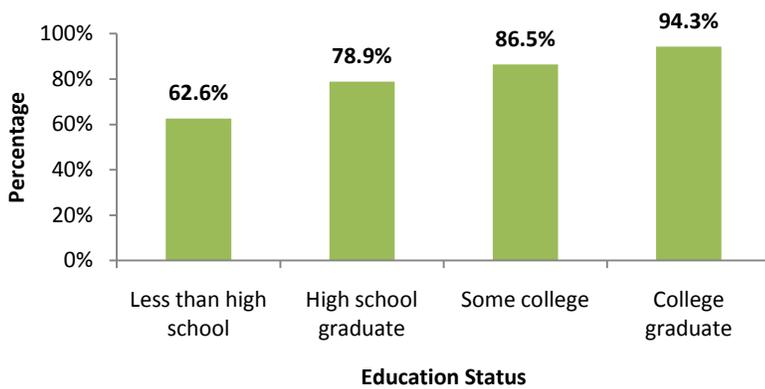


- About 9 in 10 males (86.1%) and females (85.7%) age 18-64 years old have health care coverage.
- Health care coverage increases with an increase in age. Percentage of health care coverage among adults ages 18-24 years (78.1%, 95% CI: 74.1-82.2) is significantly lower than that of 35 years and older adults (35-44: 87.6%, 95% CI: 86.1-89.1; 45-54: 88.9%, 95% CI: 87.8-90.0; 55-64: 91.1%, 95% CI: 90.2-92.0; 65+: 98.6%, 95% CI: 98.2-98.9).



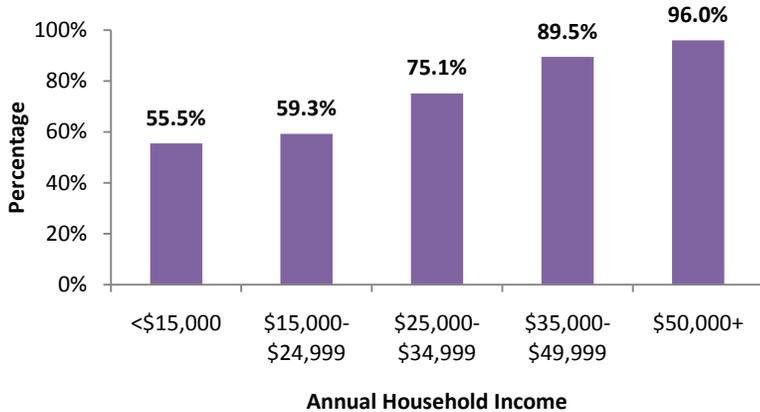
- A significantly lower percentage of 18-64 year old Hispanics have health care coverage (68.6%, 95% CI: 63.8-73.5) as compared to non-Hispanics (87.1%, 95% CI: 86.2-88.0).
- A significantly lower percentage of 18-64 year old African-Americans (73.6%, 95% CI: 68.1-79.0) and 'other' (68.8%, 95% CI: 64.3-73.6) race adults have health care coverage as compared to Whites (87.9%, 95% CI: 86.9-88.8).

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



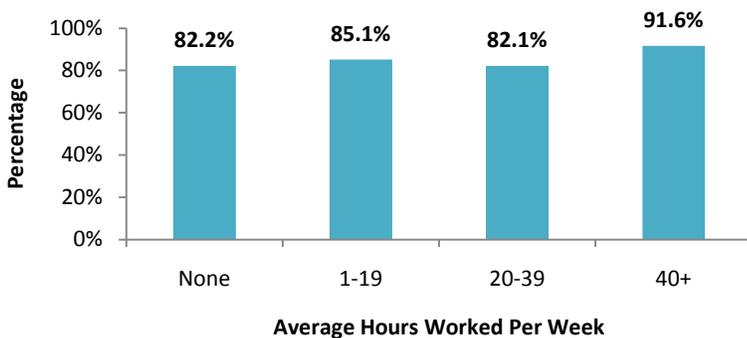
- About 6 in 10 (62.6%, 95% CI: 57.1-68.0) adults 18-64 years old with less than high school education have health care coverage as compared to more than 9 in 10 (94.9%, 95% CI: 93.4-95.2) with college or higher level education.
- Percentage of adults 18-64 years old with health care coverage increases significantly with an increase in education status.

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



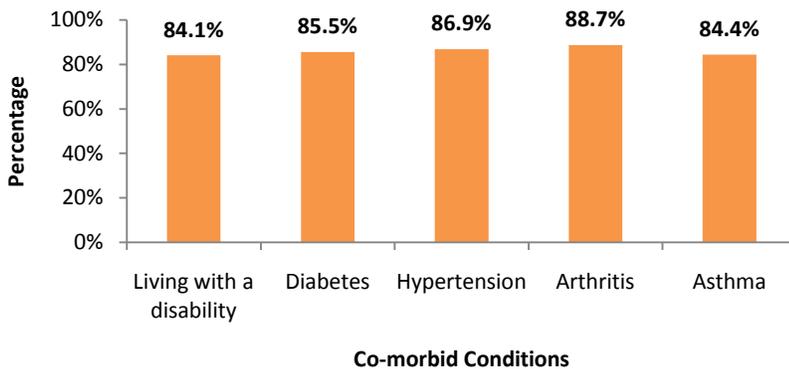
- More than 5 in 10 (55.5%, 95% CI: 49.5-61.2) adults 18-64 years old with an annual income of less than \$15,000 have health care coverage as compared to more than 9 in 10 (96%, 95% CI: 95.2-96.9) with an annual income of \$50,000 or higher.
- Percentage of adults 18-64 years old with health care coverage increases significantly with an increase in annual household income.

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



- About 9 in 10 (91.6%) adults 18-64 years old who work 40 or more hours per week have health care coverage.
- Percentage of adults 18-64 years old with health care coverage does not vary significantly by average hours worked per week.

Percentage of Adults 18 - 64 Years Old with Health Care Coverage by Co-morbid Conditions



- More than 8 in 10 adults age 18-64 years old with co-morbid conditions like hypertension, diabetes, arthritis, or asthma have health care coverage.
- About 84% 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 10 adults could not see a doctor when needed in the past 12 months because of cost. About 1 in 15 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 (31.3%), and African-Americans (26.9%) 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 have some kind of health care coverage in 2009. More than 8 in 10 adults 18-64 years old have one or more persons they think 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 is 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 85% have a specific source of ongoing primary care, further public health efforts are needed to reach the target in Kansas.

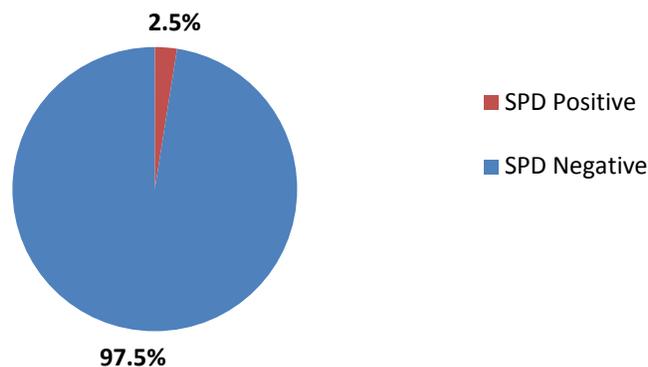
Featured Issue: Mental Health

Featured issues are public health topics, which are not leading health indicators but are public health concerns in the state of Kansas.

Mental illnesses are medical conditions that disrupt a person's thinking, feeling, mood, ability to relate to others, and daily functioning.¹⁷ Serious mental illnesses include major depression, schizophrenia, bipolar disorder, obsessive compulsive disorder, panic disorder, post traumatic stress disorder, mood disorder, autism spectrum disorders and borderline personality disorder.

Serious Psychological Distress (SPD) is a nonspecific measure of psychological distress that has been psychometrically validated and shown to be able to distinguish community DSM-IV (Diagnostic and Statistical Manual of Mental Disorders-IV)¹⁸ cases from noncases.^{19, 20, 21, 22} Kessler 6 (K6) scale is a tool often used in epidemiological studies and surveys to determine SPD status. The first 6 questions in Mental Illness and Stigma module in 2009 Kansas BRFSS (makes the K6 scale) ask how often during the past 30 days the respondent felt 'nervous,' 'restless,' 'hopeless,' 'worthless,' 'depressed', or that 'everything was an effort.' Responses were scored from 0 (none of time) to 4 (all the time) for each question and summed to produce a total score (0 to 24). A score of 13 or above was defined as SPD positive.

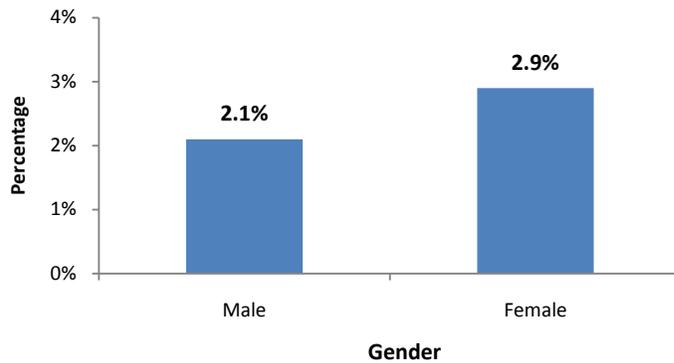
**Prevalence of Serious Psychological Distress , Kansas
2009**



- Kansas BRFSS included the Mental Illness and Stigma module for the second time in the survey.
- In 2009, among adults aged 18 years and older in Kansas, prevalence of SPD is 2.5%.
- The prevalence of SPD in 2009 did not change from 2007's estimate of 2.5%.

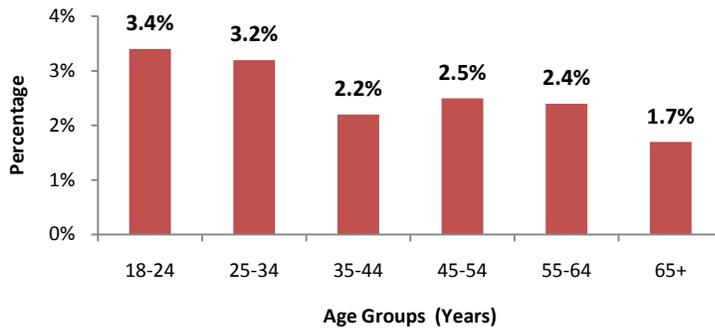
Serious Psychological Distress by Specific Subpopulations

Prevalence of SPD by Gender



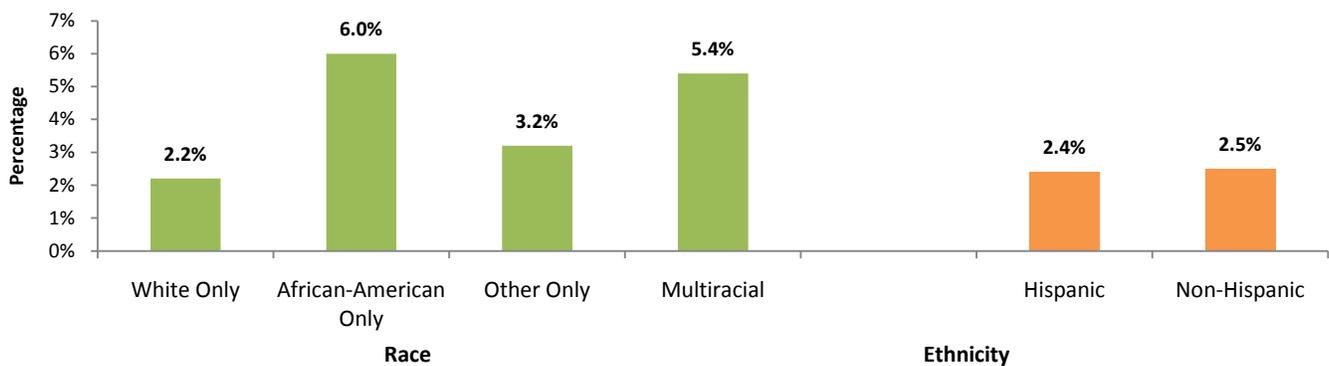
■ The prevalence of SPD among females (2.9%, 95% CI: 2.3-3.6) and males (2.1%, 95% CI: 1.4-2.7) is not statistically different.

Prevalence of SPD by Age

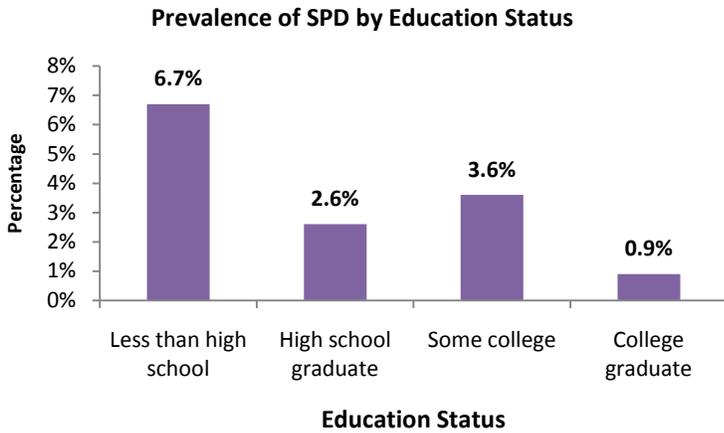


■ About 3.4% of adults 18-24 years old have mental illness that can be identified as Serious Psychological Distress (SPD).

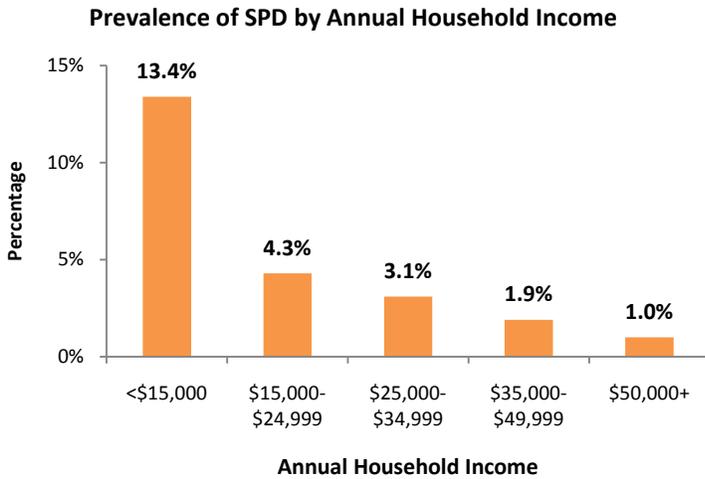
Prevalence of SPD by Race and Ethnicity



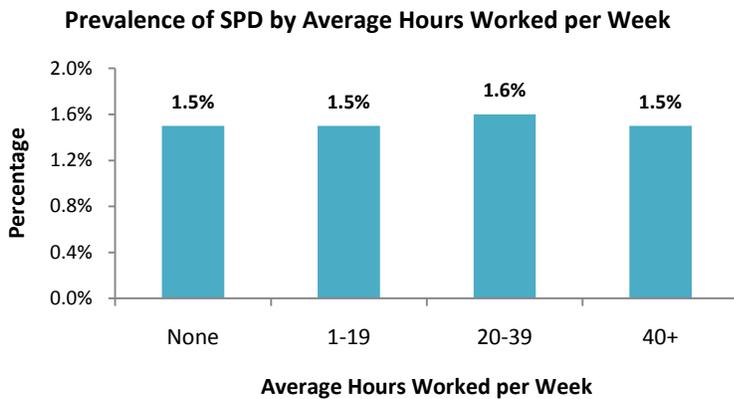
- About 2.4% (95% CI: 0.7-4.0) and 2.5% of non-Hispanic (95% CI: 2.0-3.0) adults have Serious Psychological Distress (SPD).
- African-American adults show a higher prevalence of SPD (6.0%, 95% CI: 1.6-10.5) as compared to Whites (2.2%, 95% CI: 1.8-2.7).
- Prevalence of SPD does not vary statistically by race or ethnicity.



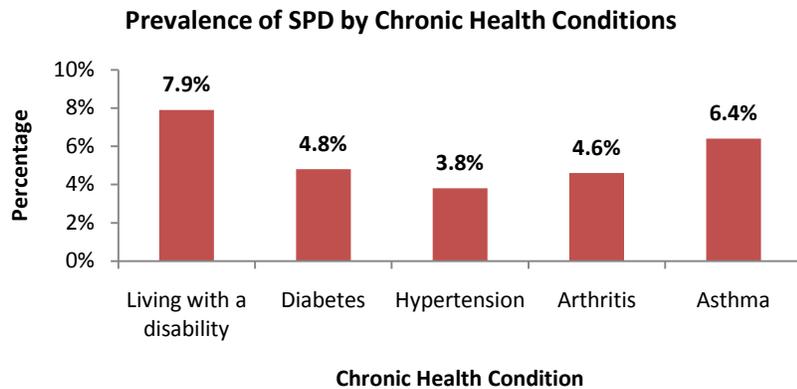
- 6.7% of adults with less than high school education have SPD.
- Adults with college or higher level education have significantly lower prevalence of SPD (0.9%, 95% CI: 0.5-1.3) as compared to any other education status categories (Some college: 3.6%, 95% CI: 2.5-4.7; HS graduate: 2.6%, 95% CI: 1.8-3.4, less than HS: 6.7%, 95% CI: 3.6-9.7).



- Prevalence of SPD is 13.4% among adults whose annual household income is less than \$15,000.
- The prevalence of SPD among adults with an annual income of less than \$15,000 is significantly higher (13.4%, 95% CI: 9.0-17.9) as compared to any other income level categories (\$15,000-\$24,999: 4.3%, 95% CI: 2.8-5.9; \$25,000-\$34,999: 3.1%, 95% CI: 1.5-4.8; \$35,000-\$49,999: 1.9%, 95% CI: 0.9-2.9; \$50,000+: 1.0, 95% CI: 0.5-1.4).



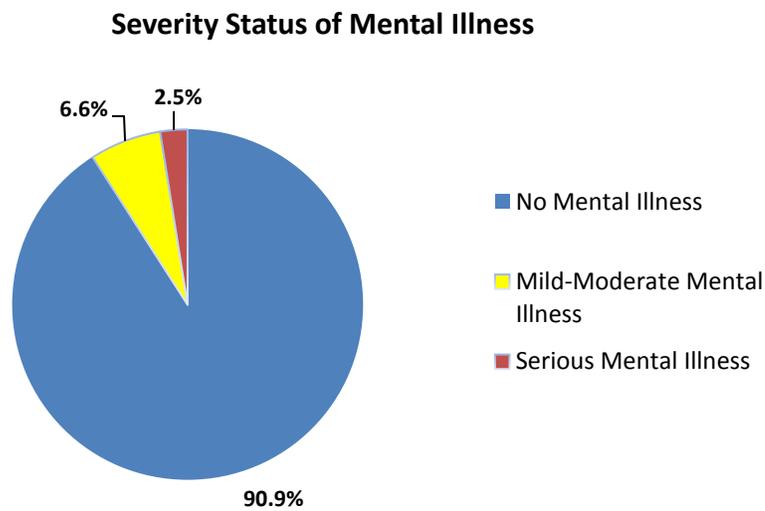
- 1.5% of adults who work 40 hours or more per week has SPD.



- About 6.4% adults with asthma have SPD.
- 7.9% of adults living with a disability have SPD.

Severity Status of Mental Illness

In addition to examination of SPD (total score of 13 or above on the K6 scale), severity of mental illness is measured by classifying respondents in 3 categories based on their total K6 scale score. These categories include: (1) no mental illness or probably non-cases with a total score of 0-7; (2) mild-moderate mental illness with a total score of 8-12; and (3) probably serious mental illness (SPD) with a total score of 13-24.



- 2.5% (95% CI: 2.0%, 3.0%) of the adults are probable cases of serious mental illness (SPD), 6.6% (95% CI: 5.9%, 7.4%) are cases of probable mild-moderate illness and 90.9% (95% CI: 90.0%, 91.7%) are non-cases.

Summary

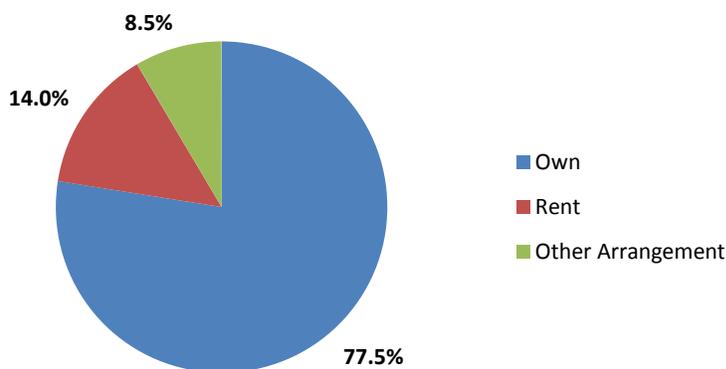
Prevalence of Serious Psychological Distress (SPD) does not vary by gender, age, race or ethnicity. Education and annual household income have a significant influence on prevalence of SPD. Adults with college or higher level education have significantly lower prevalence of SPD than any other education status categories. Prevalence of SPD is significantly higher among adults whose annual household income was less than \$15,000 as compared to any other income level categories. Prevalence of SPD is high among adults living with a disability.

Featured Issue: Social Context

Social and economic conditions are major determinants of health.²⁹ Social and economic forces acting at a collective level shape individual health and risk behaviors, environmental exposures, and access to resources needed to maintain good health.²⁹ Developing a better understanding of the social and economic determinants of health is essential to reduce health disparities.²⁹ To reduce inequalities in health it is very important to address the social determinants of health.³⁰

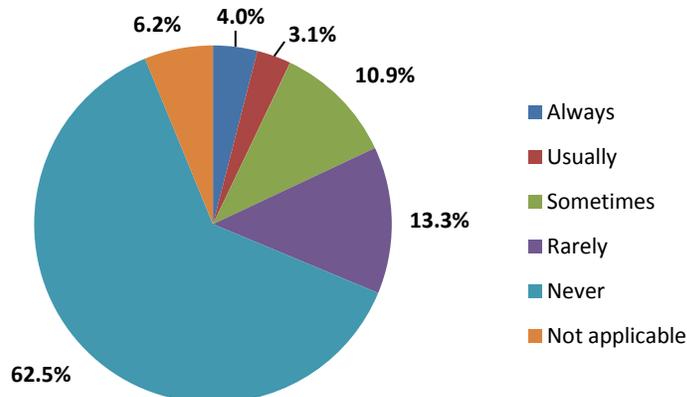
In 2009 Kansas BRFSS included a module ‘Social Context’ for the first time in the survey to assess the status of social determinants among adult Kansans.

Status of Living Arrangement of Adults 18 Years and Older



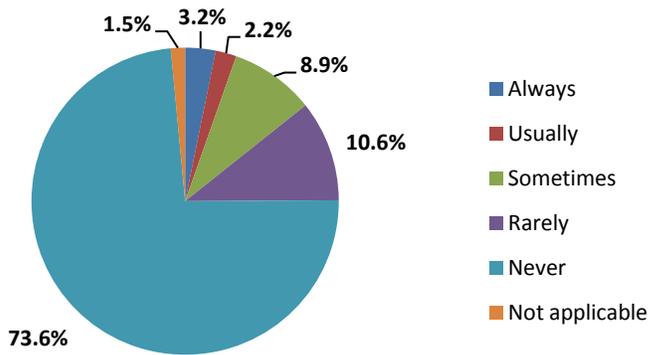
- About 3 in 4 adults (77.5%) own their home.
- About 1 in 12 adults (8.5%) lives in a rental home.
- About 1 in 7 adults (14%) has some other living arrangement which may include group home or staying with friends or family without paying rent.

Status of Adults Who Worried or Stressed About Paying Rent/Mortgage



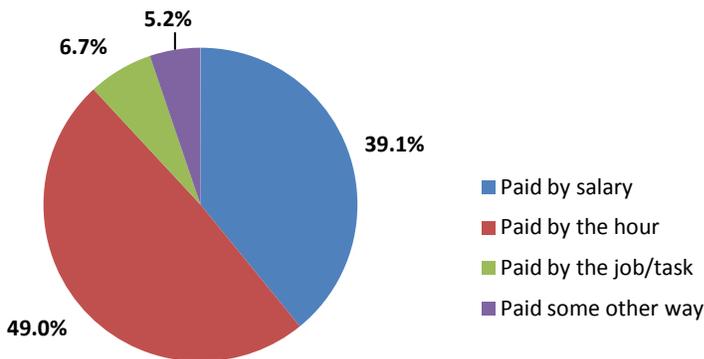
- About 4% of adults who rent or own homes were **always** worried or stressed about rent/mortgage in the past year.
- About 7% of adults who rent or own homes were either **always** or **usually** worried or stressed about rent/mortgage in the past 12 months.

Status of Adults Who Worried or Stressed About Buying Nutritious Meals



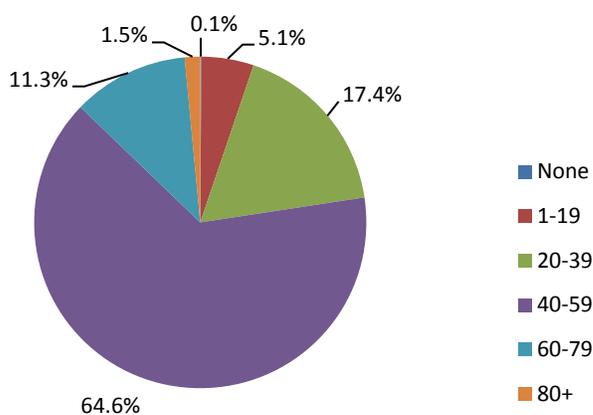
- About 3.2% of adults were **always** worried or stressed about having enough money to buy nutritious meals in the past 12 months.
- About 2.2% were **usually** worried or stressed about having enough money to buy nutritious meals in the past 12 months.

Mode of Payment for Employed for Wages or Self-Employed Adults



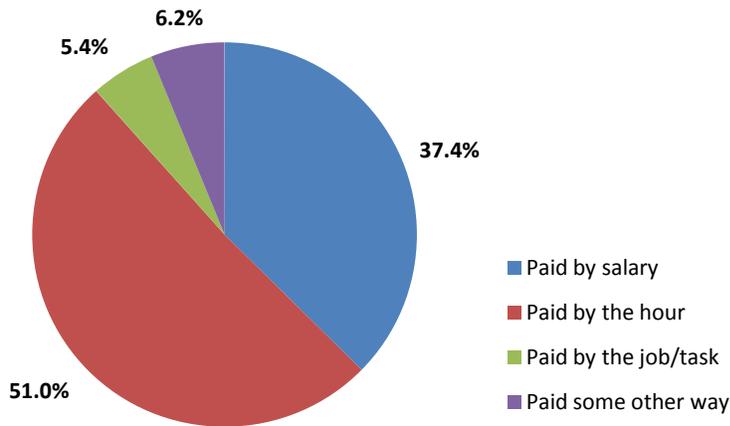
- About half of the adults who are employed for wages or self-employed (49%) are paid by the hour.
- About 2 in 5 adults (39.1%) who are employed for wages or self-employed were paid by salary.
- About 6.7% who are employed for wages or self-employed are paid by the job or task.

Average Hours Worked Per Week by Adults Employed for Wages or Self-Employed



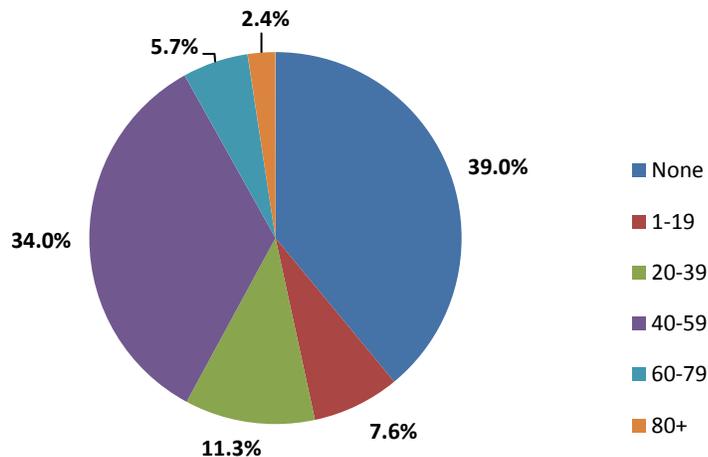
- About two-third of the adults who are employed for wages or self-employed (64.6%) work 40 to 59 hours per week.
- About 11.3% of adults who are employed for wages or self-employed work 60 to 79 hours per week.
- About 17.4% of adults who are employed for wages or self-employed (17.4%) work 20 to 39 hours per week.

Mode of Payment for Out of Work or Retired Adults At Their Last Job/Business



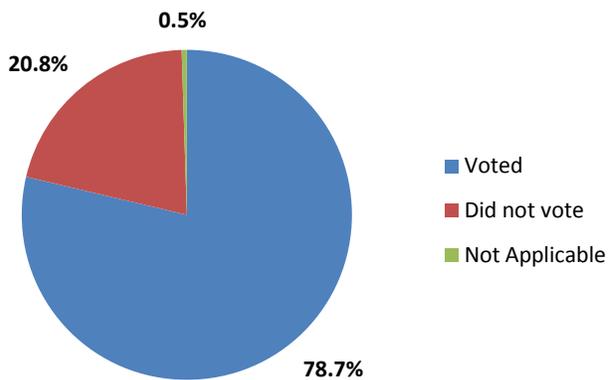
- Half of the adults who are out of work or retired (51%) were paid by the hour at their last job/business.
- More than 37.4% of adults who are out of work or retired were paid by salary at their last job/business.
- About 5.4% of adults who are out of work or retired were paid by the job or task at their last job/business.

Average Hours Worked Per Week At Their Last Job/Business by Adults Who Were Not Currently Employed for Wages or Self-Employed



- About 3 in 10 adults **not** currently employed for wages or self-employed (34%) worked 40 to 59 hours per week at their last job/business.
- About 1 in 17 adults **not** currently employed for wages or self-employed (5.7%) worked 60 to 79 hours per week at their last job/business.
- About 1 in 10 adults **not** currently employed for wages or self-employed (11.3%) worked 20 to 39 hours per week at their last job/business.

Status on Voting in 2008 Presidential Election



- About 7 in 9 adults (78.7%) voted in the last presidential election.
- About 1 in 5 adults (20.4%) did not vote in the last presidential election.
- Only 0.5% of adults were not registered or eligible to vote in the last presidential election.

Summary

About 77.5% of adults own and about 8.5% rent their home. More than 7% of the adults who rent or own their home were either **always** or **usually** worried or stressed about their rent/mortgage during the past year. More than 5% of the adults were either **always** or **usually** worried or stressed about having enough money to buy nutritious meals. About half of the adults who are employed for wages or self-employed are paid by the hour and about 2 in 5 were paid by salary. About two-third of the adults who are employed for wages or self-employed work for 40 to 59 hours per week. Half of the adults who are out of work or retired (51%) were paid by the hour at their last job/business. A little less than 8 in 10 adults voted in the last presidential election.

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 fairly consistent across all states. Types of core questions include fixed, rotating, and emerging health issues.
 - Fixed core: It 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: It 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. The CDC staff and the state coordinators later decide if these questions should become a part of the fixed core.
- **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 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. The survey selection committee uses a specific set of criteria to determine the questionnaire’s content.

Sampling

The 2009 BRFSS used disproportionate stratified sample consists 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 was implemented to include random selection of telephone numbers within geographical strata comprised of county groupings instead of randomly selecting all telephone numbers from state as a whole (sampling from multiple geographic strata rather than from entire state as a single stratum as done in previous years). This is a methodology that is commonly used to target collection for geographically identifiable subpopulations, for example people in rural areas. It also increases the accuracy of prevalence estimates for a small subpopulation. This modification in the sampling methodology of the 2009 and future Kansas BRFSS is made to 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 each 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 2009 Kansas BRFSS achieved a rate of 60.1% 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.

Limitations

Like any other research method, BRFSS has its limitations.

- BRFSS is conducted only among non-institutionalized adults residing in private residences with landline telephones. 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.

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, we calculate 95% confidence intervals. 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 in 2009. CDC optional modules and state added questions are organized by topics into two parts; part A and part B. All 18,912 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 8,000 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 with the specific health condition may vary on each question due to respondents terminating at various points in the survey.

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