



MICHIGAN BRFSS SURVEILLANCE BRIEF

A NEWSLETTER FROM THE CHRONIC DISEASE EPIDEMIOLOGY UNIT, MDCH

Health Outcomes Among Adult Tobacco Users in Michigan

Background. Tobacco use is the leading cause of preventable disease and death in both Michigan and the United States. Cigarette smoking harms nearly every organ of the human body and is linked to numerous chronic diseases, including heart disease, cancer, stroke, and diabetes. In addition to these diseases, the list of diseases caused by smoking has been expanded to include abdominal aortic aneurysm, acute myeloid leukemia, cataracts, cervical cancer, kidney cancer, pancreatic cancer, pneumonia, gum disease, and stomach cancer.¹ Smoking can trigger asthma attacks and worsen symptoms,² and is also linked to depression.³ Smoking causes approximately one out of every five deaths in the United States each year, resulting in 443,000 deaths annually. This total includes 46,000 heart attack deaths and 3,400 lung cancer deaths among nonsmokers who were exposed to secondhand smoke.⁴ Furthermore, smoking is also the leading cause of premature death, as adults who smoke cigarettes die, on average, 14 years earlier than nonsmokers.⁵ Cigarette smoking results in annual health costs of \$3.4 billion in Michigan and \$96 billion in the United States.^{4,6} Quitting smoking, at any age, can significantly reduce an individual's chances of heart disease, cancer, and other chronic and serious illnesses, and can, therefore, reduce health care costs associated with these smoking-related illness.

Methods. 2010 Michigan Behavioral Risk Factor Survey data were used to investigate the relationships between specific chronic health outcomes and smoking status among Michigan adults. Age-adjusted prevalence rates and adjusted odds ratios for specific chronic health outcomes by smoking status were calculated in order to provide further evidence regarding these relationships.

Table 1. Age-adjusted Prevalence of Chronic Health Outcomes by Smoking Status, 2010 MiBRFS

Smoking Status	Ever Told Diabetes ^b		Ever Told Heart Attack ^c		Ever Told Stroke ^d	
	%	95% CI	%	95% CI	%	95% CI
Current Smoker ^a	9.4	(7.7-11.4)	6.6	(5.3-8.1)	3.8	(2.9-5.2)
Former Smoker	9.8	(8.5-11.3)	5.4	(4.6-6.3)	2.8	(2.3-3.5)
Never Smoked	8.8	(7.7-10.0)	2.9	(2.5-3.4)	2.2	(1.8-2.6)
	Ever Told Any Cardiovascular Disease ^e		Current Asthma ^f		Has a Disability ^g	
	%	95% CI	%	95% CI	%	95% CI
Current Smoker ^a	11.4	(9.7-13.3)	10.7	(8.7-13.2)	31.3	(28.2-34.5)
Former Smoker	10.2	(9.0-11.5)	12.2	(8.9-16.4)	25.5	(22.1-29.2)
Never Smoked	6.9	(6.2-7.6)	10.2	(9.0-11.5)	19.4	(17.9-21.0)
	Current Major Depression ^h		Ever Told Cancer ⁱ		Ever Told Prostate Cancer ^j	
	%	95% CI	%	95% CI	%	95% CI
Current Smoker ^a	17.6	(14.5-21.2)	7.7	(5.5-10.6)	3.8	(2.2-6.7)
Former Smoker	8.1	(5.3-12.3)	11.5	(9.6-13.8)	5.8	(4.7-7.1)
Never Smoked	6.8	(5.5-8.3)	9.2	(7.8-10.8)	4.0	(3.1-5.3)

^a The proportion of adults who reported smoking at least 100 cigarettes in their life and that they currently smoke every day or some days.
^b The proportion of adults who reported that they were ever told by a doctor that they have diabetes. Adults who have been told they have prediabetes and women who had diabetes only during pregnancy were classified as not having been diagnosed.
^c The proportion of adults who reported ever being told by a doctor that they had a heart attack or myocardial infarction.
^d The proportion of adults who reported ever being told by a doctor that they had a stroke.
^e The proportion of adults who reported ever being told by a doctor that they had either a heart attack, coronary heart disease or a stroke.
^f The proportion of adults who reported ever being told by a doctor that they have asthma and they still have asthma.
^g The proportion of adults who reported being limited in any activities because of physical, mental, or emotional problems, or reported that they required the use of special equipment (such as a cane, a wheelchair, a special bed, or a special telephone)
^h The proportion of adults who were classified as having major depression.
ⁱ The proportion of adults who reported ever being told by a doctor that they have cancer.
^j The proportion of adult males aged 40 years and above who reported ever being told by a doctor that they have prostate cancer.

MiBRFSS News

- Data collection for the 2011 Michigan BRFS has been completed and the new 2011 Michigan BRFS estimates should be available by June of 2012.
- The 2012 CDC BRFSS Annual Meeting will be held in Atlanta, GA on March 24-27, 2012.
- Did you miss an issue of *Michigan BRFSS Surveillance Brief*? Back issues are also available on our website.

Table 2. Adjusted^a Odds of Having a Chronic Health Outcome by Smoking Status, 2010 MiBRFS

	Odds Ratio	95% CI
Ever Told Diabetes		
Current Smoker	0.80	(0.58-1.10)
Former Smoker	1.10	(0.89-1.36)
Ever Told Heart Attack		
Current Smoker	1.91	(1.37-2.66)
Former Smoker	1.65	(1.27-2.15)
Ever Told Stroke		
Current Smoker	1.79	(1.12-2.86)
Former Smoker	1.29	(0.93-1.79)
Ever Told Any Cardiovascular Disease		
Current Smoker	1.49	(1.10-2.03)
Former Smoker	1.42	(1.14-1.76)
Current Asthma		
Current Smoker	0.91	(0.67-1.25)
Former Smoker	1.22	(0.96-1.55)
Has a Disability		
Current Smoker	1.50	(1.21-1.87)
Former Smoker	1.43	(1.21-1.69)
Current Major Depression		
Current Smoker	1.99	(1.34-2.94)
Former Smoker	1.25	(0.88-1.78)
Ever Told Cancer		
Current Smoker	0.74	(0.46-1.18)
Former Smoker	1.43	(1.05-1.94)
Ever Told Prostate Cancer		
Current Smoker	0.93	(0.46-1.87)
Former Smoker	1.72	(1.11-2.67)

^a Adjusted by age, gender, race/ethnicity, education, and household income level.

Results. Table 1 shows that both current and former smokers had higher age-adjusted prevalence rates of ever being told they had a heart attack, any form of cardiovascular disease, and having a disability when compared to adults who have never smoked. Current smokers also had higher rates of ever being told they had a stroke or being classified with major depression when compared to nonsmokers.

Table 2 shows the adjusted odds of Michigan adults having a specific chronic health outcome by smoking status. The odds ratios presented in Table 2 were adjusted for age, gender, race/ethnicity, education, and household income level. When compared to nonsmokers, current smokers were between 1.49 and 1.99 times more likely to have ever been told they had a heart attack (OR = 1.91), stroke (OR = 1.79), any form of cardiovascular disease (OR = 1.49), a disability (OR = 1.50), or current major depression (OR = 1.99). When comparing former smokers to nonsmokers, former smokers were between 1.42 and 1.72 times more likely to have ever been told they had a heart attack (OR = 1.65), any form of cardiovascular disease (OR = 1.42), a disability (OR = 1.43), any type of cancer (OR = 1.43), or prostate cancer (OR = 1.72) specifically. No significant odds ratios by smoking status were found for diabetes or current asthma.

Conclusions. Consistent with numerous studies and reports from the U.S. Surgeon General, these results indicate that smoking is highly related to the prevalence of certain chronic health outcomes among Michigan adults. It is important to note that the rate of certain chronic health outcomes was higher among former smokers compared to nonsmokers. These findings may be due to smokers quitting when they receive a serious disease diagnosis; furthermore, it is unknown when these respondents became former smokers. It is also important to note that respondents who smoke were more likely to have a disability compared to nonsmokers. The importance of prevention and treatment for quitting is intensified for the disabled; however, quitting smoking has immediate, as well as long-term benefits, for all populations.

References

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The Michigan Behavioral Risk Factor Surveillance System (MiBRFSS)

The MiBRFSS comprises annual, statewide telephone surveys of Michigan adults aged 18 years and older and is part of the national BRFSS coordinated by the CDC. The annual Michigan Behavioral Risk Factor Surveys (MiBRFS) follow the CDC BRFSS protocol and use the standardized English core questionnaire that focuses on various health behaviors, medical conditions, and preventive health care practices related to the leading causes of mortality, morbidity, and disability. Interviews are conducted across each calendar year. Data are weighted to adjust for the probabilities of selection and a poststratification weighting factor that adjusts for the sex, age, and race distribution of the adult Michigan population. All analyses are performed using SAS-callable SUDAAN[®] to account for the complex sampling design.

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