

SOUTH DAKOTA BRFSS SURVEILLANCE BRIEF: CANCER STATUS AND HEALTH INDICATORS

Background:

The American Cancer Society estimates over 15.5 million Americans alive today have a history of cancer.¹ Cancer typically occurs in older adults, with 87% of all cancers diagnosed among those aged 50 and older.¹ Practicing healthy behaviors such as maintaining a healthy weight, completing the HPV vaccine series, avoiding tobacco, limiting or eliminating alcohol intake, and practicing skin protection can reduce a person's risk of developing cancer. However, some risk factors such as getting older and genetics cannot be modified.²

Methods:

The South Dakota Behavioral Risk Factor Surveillance System (BRFSS) is a telephone survey of residents aged 18 and older and is conducted as a combined effort between the South Dakota Department of Health (DOH) and the Centers for Disease Control and Prevention. Further details on the BRFSS methodology can be found at <https://doh.sd.gov/Statistics/2016BRFSS/Methodology.pdf>.

Two questions related to lifetime cancer prevalence were included within the CDC core portion of the 2015 and 2016 SD BRFSS. The BRFSS does not allow differentiation between basal and squamous cell carcinomas of the skin and melanoma of the skin. Since basal and squamous cell carcinomas of the skin are not reportable by law to the SD Cancer Registry, this report compares respondents who indicated having been told by a doctor, nurse, or other health professional that they had any other type(s) of cancer, other than skin cancer, to those respondents who reported they had never been told they had cancer. In this report, these respondent groups are identified as cancer survivors and no cancer history; however, the no cancer history group may include respondents with a history of skin cancer. Results from the 2015 and 2016 BRFSS survey were combined to give more stable estimates. Data was age-adjusted using the 2000 Census population and the following age groups: 18-29, 30-39, 40-49, 50-64, 65-74, and 75+. Data analysis was conducted using SAS V9.3.

This report utilizes data from the 2015 and 2016 SD BRFSS to compare demographics, physician status, health behaviors, and quality of life indicators between cancer survivors and those with no cancer history. All questions were asked in both years, with the exception of questions on muscle strengthening guidelines and quality of life limitations due to physical, mental, or emotional problems. Those questions were only asked in 2015.

Results:

In 2015 and 2016 combined, 7.1% of the South Dakota adult population stated that they had ever been told by a doctor or other health professional that they had cancer, other than skin cancer. When adjusted for age, the prevalence is 6.2%. Table 1 shows the age-adjusted prevalence rates for the demographics of the cancer survivorship population compared with those who have no history of cancer. Among cancer survivors, 64.4% were female while only 35.6% were male.

Table 1. Demographic comparison between cancer survivors and those with no cancer history, 2015 & 2016 SD BRFSS (N=12,988)

Demographics	% (95% CI)	
	Cancer Survivor	No Cancer History
	6.2 (5.6-6.8)	93.8 (93.1-94.4)
Age		
18-44	11.0 (7.5-14.6)	48.5 (46.9-50.1)
45-54	10.8 (7.1-14.5)	15.8 (14.7-16.8)
55-64	23.0 (18.98-27.1)	17.2 (16.1-18.2)
65-74	24.7 (21.2-28.3)	10.6 (9.8-11.4)
75+	30.5 (26.3-34.6)	8.0 (7.3-8.6)
Gender		
Male	35.6 (26.1-46.4)	50.9 (49.2-52.5)
Female	64.4 (53.6-73.9)	49.1 (47.5-50.8)
Race		
White	94.7 (89.3-97.4)	84.6 (83.0-86.0)
Other	LNE	LNE
American Indian	4.9 (2.3-10.1)	7.0 (6.2-8.0)
Education		
Less than high school	8.6 (4.7-15.4)	10.3 (9.1-11.7)
High school graduate	26.5 (19.7-34.6)	30.7 (29.1-32.3)
Some College	42.6 (32.5-53.3)	34.0 (32.5-35.6)
College graduate	22.3 (15.5-31.0)	25.0 (23.7-26.2)
Income		
<\$20,000	25.3 (15.4-38.6)	13.8 (12.6-15.1)
\$20,000-\$34,999	16.1 (10.8-23.3)	18.6 (17.3-20.1)
\$35,000-\$49,999	21.0 (13.0-32.2)	17.4 (16.0-18.9)
\$50,000-\$74,999	19.4 (12.1-29.6)	18.9 (17.5-20.3)
\$75,000+	18.2 (13.5-24.1)	31.3 (29.7-32.9)

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Two variables were examined related to health care access and include those who had a personal doctor and those who could not see a doctor due to cost, as noted in Table 2. Adjusting for age, 87.8% of cancer survivors had a personal doctor while only 75.7% of those with no history of cancer had a personal doctor.

Table 2. Health Care Access

	% (95% CI)	% (95% CI)
	Cancer Survivor	No Cancer History
Percent with a Personal Doctor	87.8 (76.1-94.2)	75.7 (74.2-77.2)
Percent who could not see a doctor due to cost	13.8 (7.6-23.6)	8.7 (7.7-9.8)

Table 3. Health Behaviors

	% (95% CI)	% (95% CI)
	Cancer Survivor	No Cancer History
BMI		
Underweight	2.6 (0.5-12.1)	1.3 (1.0-1.8)
Normal	34.5 (25.7-44.4)	33.2 (31.6-34.8)
Overweight	26.2 (19.5-34.1)	35.2 (33.6-36.8)
Obese	36.8 (27.1-47.5)	30.3 (28.8-31.9)
Current Smoker	29.2 (21.2-38.8)	19.5 (18.1-20.9)
Tried to Quit Smoking	68.2 (55.2-78.8)	56.7 (52.6-60.6)
No Leisure Time Physical Activity	21.2 (14.4-30.0)	19.3 (18.1-20.6)
Met Recommended Muscle Strengthening Guidelines	27.5 (15.4-44.2)	29.8 (27.7-31.9)

Table 3 outlines BMI, smoking status, and physical activity. When adjusted for age, cancer survivors were more likely to be current smokers and to have tried to quit smoking within the past year. Similar rates were found among cancer survivors versus those with no cancer history for no leisure time physical activity (21.2% vs. 19.3%) and meeting muscle strengthening guidelines (27.5% vs. 29.8%)

Table 4 compares quality of life indicators between cancer survivors and those with no history of cancer. All three variables of interest were higher among cancer survivors. After adjusting for age, cancer survivors were more likely to rate their health status as fair or poor, to be limited in activities due to physical, mental, or emotional problems, and to have serious difficulty concentrating or remembering due to physical, mental, or emotional conditions.

Table 4. Quality of Life

	% (95% CI)	% (95% CI)
	Cancer Survivor	No Cancer History
General Health Status:		
Fair or Poor	30.3 (21.9-40.2)	11.4 (10.4-12.4)
Limited in Activities because of Physical, Mental, or Emotional Problems	25.2 (17.2-35.4)	18.8 (17.2-20.4)
Has serious difficulty concentrating, remembering or making decisions due to Physical, Mental, or Emotional Conditions	11.5 (7.1-18.3)	7.0 (6.2-8.0)

Conclusions:

As expected, cancer rates increased with age. Of note, 64.4% of cancer survivor respondents were female. This is in discord with national data that indicates cancer prevalence is higher among males. ACS reports that one in three women and nearly one in two men will have cancer at some point during their lifetime.³ While it is positive that cancer survivors tried to quit smoking at a higher rate than those with no cancer history, the increased likelihood of cancer survivors to be current smokers, 29.2% vs. 19.5%, indicates that additional tobacco use assessment and cessation referral is warranted by healthcare professionals for this patient population. With one in five respondents from both groups reporting no leisure time physical activity, physical activity promotion for all patient populations is recommended. Given the large disparity seen in quality of life indicators among cancer survivors versus the population without a cancer history, further research and implementation of evidence-based interventions proven to increase quality of life for cancer survivors is needed.

References:

1. American Cancer Society. (2017). *Cancer Facts & Figures 2017*. Retrieved from <https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer-facts-figures-2017.html>
2. Centers for Disease Prevention and Control. (2017). *Cancer Prevention and Control*. Retrieved from <https://www.cdc.gov/cancer/>
3. American Cancer Society. (n.d). *After Diagnosis: A Guide for Patients and Families*. Retrieved from <https://www.cancer.org/treatment/understanding-your-diagnosis/after-diagnosis/who-gets-cancer.html>
4. SD Cancer Registry. (2017). *An Annual Report on Cancer Incidence and Mortality Among South Dakotans, 2014*. Retrieved from <https://getscreend.sd.gov/documents/2014/FullReport.pdf>