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## **Cigarette Smoking Among Reproductive-Aged Women—Behavioral Risk Factor Surveillance System, 1989**

Women who smoke cigarettes are at increased risk not only for chronic diseases (e.g. lung cancer and chronic obstructive pulmonary disease) but—if they use oral contraceptives—also for myocardial infarction [1]. In addition, cigarette smoking during pregnancy increases the risk for low birth weight and premature infants, miscarriage, stillbirth, sudden infant death syndrome, and infant mortality [2]. Because of these risks and other health problems associated with cigarette smoking, one of the national health objectives for the year 2000 is to reduce the prevalence of smoking to 12% among reproductive-aged women (18–44 years of age) [3]. This report summarizes data from the 1989 Behavioral Risk Factor Surveillance System (BRFSS) on the prevalence of smoking among reproductive-aged women.

In 1989, health departments in 39 participating states and the District of Columbia used a standard questionnaire to conduct telephone interviews of adults aged  $\geq 18$  years [4]. Current smokers were defined as persons who had smoked at least 100 cigarettes and who reported being a smoker at the time of the interview. Individual responses were weighted to provide estimates representative of the adult population of each participating state. To compare smoking prevalences between states, weighted state-specific prevalences were standardized for the distribution of the 1980 US population by age, race, and educational level. Smoking prevalences for

sub groups (age, race, educational level, and pregnancy status) were standardized by adjusting for the other variables.

In 1989, weighted crude prevalences of cigarette smoking among reproductive-aged women varied from 17% in Utah to 32% in Kentucky and Rhode Island (median: 26.5%) (Table 1). Standardized smoking prevalences ranged from 21% in Texas to 37% in Wisconsin. In general, standardized smoking prevalences were highest in the midwestern states and lowest in the Rocky Mountain and mid-central states.

Older women and women with less than a high school education were more likely to smoke (Table 2). Pregnant women were less likely than nonpregnant women to smoke. Smoking prevalences did not vary substantially between white and black women, the only racial groups for which rates could be calculated because the numbers of respondents of other racial/ethnic groups were too small to provide stable estimates.

Among reproductive-aged women who smoked, 84% smoked fewer than 25 cigarettes per day (Table 3). Women aged 35–44 years tended to be heavier smokers than younger women. Approximately 44% of all women who were current smokers had attempted to quit smoking (i.e. quitting for at least 1 week) in the previous year. Women aged 35–44 years were substantially less likely than younger women to have attempted quitting.

**Table 1. Weighted and standardised<sup>a</sup> smoking prevalences<sup>b</sup> among reproductive-aged women, by state – Behavioral Risk Factor Surveillance System, 1989.**

State	Sample size	Weighted prevalence		Standardized prevalence		State	Sample size	Weighted prevalence		Standardized prevalence	
		%	(95% CI <sup>d</sup> )	%	(95% CI)			%	(95% CI <sup>d</sup> )	%	(95% CI)
Alabama	549	23.4	(±3.9)	29.2	(±4.3)	New Hampshire	444	26.7	(±4.7)	31.9	(±5.0)
Arizona	500	26.1	(±4.5)	31.0	(±5.7)	New Mexico	370	22.2	(±4.7)	24.7	(±5.3)
California	793	20.8	(±3.1)	29.5	(±4.4)	New York	426	26.9	(±5.1)	30.5	(±6.5)
Connecticut	446	30.3	(±4.8)	34.8	(±5.5)	North Carolina	553	26.4	(±4.2)	28.9	(±4.5)
District of Columbia	513	24.9	(±4.8)	21.8	(±6.8)	North Dakota	470	20.8	(±3.7)	25.0	(±5.0)
Florida	466	28.7	(±4.5)	29.6	(±4.7)	Ohio	461	28.0	(±4.7)	30.0	(±4.6)
Georgia	565	23.0	(±3.8)	28.1	(±4.5)	Oklahoma	348	26.7	(±5.5)	28.9	(±5.6)
Hawaii	566	20.6	(±3.6)	22.3	(±6.2)	Oregon	499	25.3	(±4.1)	29.9	(±4.6)
Idaho	539	21.0	(±3.5)	22.7	(±3.6)	Pennsylvania	544	30.4	(±4.2)	32.4	(±4.3)
Illinois	533	26.8	(±4.1)	32.6	(±5.1)	Rhode Island	523	32.1	(±4.5)	34.4	(±4.3)
Indiana	611	30.0	(±4.0)	33.8	(±4.0)	South Carolina	518	22.4	(±3.9)	28.1	(±4.6)
Iowa	324	29.0	(±5.5)	35.0	(±6.9)	South Dakota	513	23.3	(±4.0)	24.4	(±4.8)
Kentucky	556	32.1	(±4.5)	33.2	(±4.4)	Tennessee	732	30.0	(±3.6)	31.4	(±3.5)
Maine	387	31.0	(±5.3)	36.0	(±5.3)	Texas	486	21.9	(±4.0)	21.2	(±4.4)
Maryland	582	22.4	(±3.9)	27.5	(±5.0)	Utah	617	17.1	(±3.5)	24.2	(±4.0)
Massachusetts	384	26.7	(±4.9)	31.7	(±5.3)	Virginia	530	24.2	(±4.4)	26.2	(±4.5)
Michigan	746	28.2	(±3.4)	32.5	(±3.9)	Washington	461	26.8	(±4.3)	31.8	(±5.2)
Minnesota	1073	24.0	(±2.8)	33.4	(±3.5)	Wisconsin	380	30.0	(±5.0)	36.7	(±5.0)
Missouri	460	27.1	(±4.6)	30.6	(±5.1)	West Virginia	475	29.8	(±5.4)	31.3	(±4.7)
Montana	332	18.8	(±4.3)	24.6	(±5.3)						
Nebraska	399	24.2	(±4.5)	25.4	(±5.1)	<b>Median</b>		<b>26.5</b>		<b>30.0</b>	

<sup>a</sup>Weighted to provide estimates representative of the adult population of each participating state. Standardized for the distribution of the 1980 U.S. population by age, race, and educational level to allow comparisons between states.

<sup>b</sup>Percentage of women who had smoked at least 100 cigarettes and who reported being a smoker at the time of the interview.

<sup>c</sup>Aged 18–44 years.

<sup>d</sup>Confidence interval.

**Editorial Note:** In this report, the state-to-state variations of smoking prevalences among reproductive-aged women may reflect differences in sociodemographic characteristics (e.g. age, race, and educational level) of state populations. However, because these variations persisted after standardization to adjust for these differences, other factors (e.g. occupation, employment status, and family income) may affect state-specific smoking prevalences. These variations may also reflect

differences in the intensity of cigarette advertising and in the effectiveness of statewide smoking-control interventions [2,5]. In addition, reasons for the lower prevalences of smoking among certain groups could include (1) declining smoking initiation rates in younger cohorts of women (a trend observed previously for white and Hispanic women [6]); (2) decreasing smoking-initiation and increasing smoking-cessation rates over time among women with higher educational levels

**Table 2. Weighted and standard<sup>a</sup> smoking prevalences<sup>b</sup> among reproductive-aged women<sup>c</sup>, by age, race, educational level, and pregnancy status – Behavioral Risk Factor Surveillance System, 1989.**

Characteristic	Weighted prevalence		Standardized prevalence		Characteristic	Weighted prevalence		Standardized prevalence	
	%	(95% CI <sup>d</sup> )	%	(95% CI)		%	(95% CI <sup>d</sup> )	%	(95% CI)
<b>Age (years)</b>					<b>Educational level</b>				
18–24 <sup>e</sup>	23.3	(±2.0)	20.6	(±3.2) <sup>f</sup>	Less than high school <sup>e</sup>	43.1	(±3.5)	43.9	(±3.5)
25–34	28.1	(±1.4) <sup>f</sup>	31.4	(±2.6) <sup>f</sup>	High school	33.4	(±1.7) <sup>f</sup>	33.3	(±1.7) <sup>f</sup>
35–44	27.9	(±1.5) <sup>f</sup>	30.8	(±3.1) <sup>f</sup>	More than high school	19.5	(±1.1) <sup>f</sup>	19.0	(±1.2) <sup>f</sup>
<b>Race<sup>g</sup></b>					<b>Pregnant</b>				
Black	25.2	(±2.7)	30.4	(±3.3)	No <sup>e</sup>	27.2	(±1.0)	30.2	(±1.2)
White	27.0	(±1.0)	32.4	(±1.5)	Yes	17.7	(±4.5) <sup>f</sup>	19.0	(±4.4) <sup>f</sup>

<sup>a</sup>Weighted to provide estimates representative of the adult population of each participating state. Standardized by adjusting for other sociodemographic variables in the 1980 U.S. population (e.g. age was standardized for race and educational level). Pregnancy status was standardized for age, race, and educational level.

<sup>b</sup>Percentage of women who had smoked at least 100 cigarettes and who reported being a smoker at the time of the interview.

<sup>c</sup>Aged 18–44 years.

<sup>d</sup>Confidence interval.

<sup>e</sup>Referent group.

<sup>f</sup>Prevalence of smoking is significantly different from that of the referent group ( $P < 0.05$ ).

<sup>g</sup>Information for standardizing rates was available only for blacks and whites.

**Table 3. Smoking quantity and quit attempt<sup>a</sup> prevalences among reproductive-aged women smokers, by age – Behavioral Risk Factor Surveillance System, 1989.**

Age (yrs)	Number of cigarettes per day						Quit attempts during past year	
	1–4		15–24		≥25		%	(95% CI)
	%	(95% CI)	%	(95% CI)	%	(95% CI)		
18–24 <sup>c</sup>	52.0	(±4.8)	38.7	(±4.7)	9.3	(±2.8)	53.7	(±4.8)
25–34	43.3	(±2.9) <sup>d</sup>	41.1	(±2.9) <sup>d</sup>	15.7	(±2.1) <sup>d</sup>	44.6	(±2.9) <sup>d</sup>
35–44	31.8	(±3.0) <sup>d</sup>	47.5	(±3.3) <sup>d</sup>	20.8	(±2.6) <sup>d</sup>	36.7	(±3.1) <sup>d</sup>
Total	41.3	(±2.0)	42.7	(±2.0)	16.0	(±1.4)	43.9	(±2.0)

<sup>a</sup>Quitting for a least 1 week in the year preceding the survey.

<sup>b</sup>Confidence interval.

<sup>c</sup>Referent group.

<sup>d</sup>Significantly different than the referent group ( $P < 0.05$ ).

[7]; and (3) the effect of higher smoking-cessation rates for pregnant women [8].

The BRFSS findings regarding amounts of smoking and attempts to quit are consistent with previous reports [2,5]. However, the proportion of women who attempted to quit smoking for at least 1 week in the year preceding the survey (44%) was substantially higher than that estimated in 1987 for the proportion of all women in the general US population who had attempted to quit for at least 1 day (32%) [5]. Therefore, smoking-cessation education for reproductive-aged women may be more successful than for women aged  $\geq 45$  years because reproductive-aged women appear to be more willing to attempt to quit smoking.

The 1989 BRFSS determined that the median prevalence of current smoking was 26.5% among reproductive-aged women in the states surveyed; accordingly, nearly all states will require concerted efforts to reduce prevalence of smoking among reproductive-aged women to 12% by the year 2000 [3]. Efforts to reduce smoking initiation among adolescent girls and to target young women for smoking-cessation interventions are important priorities to accomplish this objective [2,5].

## References

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