

# Work-Site Smoking Policies: Their Population Impact in Washington State

## ABSTRACT

This article presents data from a population-based, random-digit dialing telephone survey of 1228 employed adults in Washington State, conducted 1989 through 1990. Eighty-one percent of men and 91% of women reported work-site smoking restrictions. Employees in work sites with no-smoking policies were less likely to be current smokers; men in work sites with policies restricting smoking smoked fewer cigarettes on both workdays and nonworkdays. Forty-eight percent of male and 53% of female smokers reported reduced smoking as a result of a work-site policy. Work-site smoking policies, intended to protect against smoke exposure, may also reduce employee smoking. (*Am J Public Health*. 1993;83:1031-1033)

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### Introduction

The Department of Health and Human Services' Healthy People 2000 objectives made implementation of restrictive work-site smoking policies an important aspect of the national tobacco control effort. The proportion of work sites with smoking policies is increasing, as is the degree to which these policies restrict smoking on the job.<sup>1-3</sup> There is no recent population-based information on the proportion of the work force affected by policy restrictions, the characteristics of employees subject to a work-site policy, or the impact of policies on employed smokers. To address this lack of information, we report data from a population-based telephone survey of Washington State adults describing employed persons' reports of their smoking habits and the content and impact of smoking restrictions in their work sites.

### Methods

The data were collected in 1989 and 1990 by the Washington State Cancer Risk Behavior Survey, an ongoing random-digit dialing telephone survey of the state's population. Up to two eligible adults, one randomly selected man and one randomly selected woman, were interviewed in each household reached. Details of the sampling and methods are reported elsewhere.<sup>4</sup> The response (effectiveness) rates for men and women were 53% and 65%, respectively.

Respondents were asked about their smoking habits and history. Those who were employed but not self-employed (73.2% of men, 53.7% of women) were asked about their occupation, tenure, and the content of any workplace smoking restrictions. Smokers were asked whether and how much the policy had affected their smoking on and off the job. Smoking information was collected before policy information to avoid bias in self-reported smoking.

Results were weighted to reflect the age and sex distribution of the state population. The numbers provided are unweighted sample results; percentages

have been age- and sex-adjusted to match the population. Because of the household sampling method, male and female responses were not independent and are reported separately. Chi-square analyses and *F* and *t* tests were performed with SPSS. All statistical tests used weighted data, with weights standardized so that the sum of the weights equaled the number of subjects interviewed.

### Results

Eighty-one percent of employed men and 91% of employed women in Washington reported a smoking policy at their place of work. Table 1 provides policy response categories by sex and shows how they were grouped for analysis. Respondents who did not know about the existence or content of their work site's policy were grouped under "no restrictions," because policies were functionally nonexistent for these workers.

Table 2 shows that the presence and restrictiveness of the smoking policy varied for men and women with the size of their work site (number of employees), their occupation, and residence in the more urbanized Puget Sound region. Those employed in no-smoking work sites were less likely to be current smokers and more likely to be never smokers than were those working in less restricted settings (Table 3). Male smokers in settings with policies smoked fewer cigarettes on workdays and nonworkdays than did their unrestricted counterparts; we found no comparable associations among women.

As a means of separating the relationships of policy and smokers' personal characteristics to amount smoked, a dummy variable for policy restrictiveness

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**TABLE 1—Number and Weighted Percentage of Employed Washington State Adults Reporting Type of Smoking Restrictions, 1989 through 1990**

Policy Restrictiveness	Men		Women	
	No.	%	No.	%
No/unknown policy	113	19.2	62	9.2
No policy	106	18.6	43	6.6
Policy, content unknown	5	0.5	8	0.5
Don't know	2	0.1	11	2.1
Restrictions	288	48.3	251	38.2
Smoking allowed except in no-smoking areas	34	5.7	10	1.1
Smoking only in smoking areas	254	42.6	241	37.1
No smoking allowed	195	32.5	319	52.3
Total	596	100.0	632	100.0

*Note.* Numbers are unweighted sample sizes; percentages are weighted to match state population distribution on age and county residence.  $\chi^2 = 92.56$ ,  $P < .0001$ , for male-female differences.

was regressed on workday and off-workday cigarette consumption, with nicotine dependence (time to first cigarette), occupation, age, income, education, ethnicity, and urban residence controlled. Men in no-policy work sites still smoked more on workdays than those in restricted or no-smoking work sites (standardized beta for policy = 9.582,  $P < .0001$ ). Policy restrictiveness was not related to women's cigarette consumption or to male or female nonworkday cigarette consumption.

## Discussion

This study suggests that over 80% of employed Washington men and women

are subject to smoking restrictions at their workplace. In our study, women were subject to more restrictive policies. Thirty-two percent of men and 52% of women worked in settings in which smoking was prohibited. Those in the smallest work sites were most likely to work without a policy. Female and male professionals and female sales and clerical workers were more likely to work under no-smoking conditions. For men, residence in an urbanized area increased the chance of working in a no-smoking site, reflecting the adoption of smoking bans by many governments and private employers in the Puget Sound area.<sup>1</sup>

Men and women in no-smoking work

sites were less likely to be current smokers, and male smokers in no-smoking and restricted sites reported smoking less both at work and elsewhere than did those in companies without policies. This pattern is consistent with three conditions: a work-site policy may affect smoking, the policy may influence where smokers are hired, and sites with nonsmokers may be more likely to adopt restrictions. With cross-sectional individual-level data, only the first two conditions could be examined indirectly. We found no relation between policy restrictiveness and quitting smoking (data not shown). Among the 81% of male smokers reporting any work-site policy, 53% believed they smoked less at work and 59% smoked less away from work as a result of the policy. For the 91% of female smokers subject to a policy, 82% said they smoked less at work and 58% smoked less overall. This suggests that a work-site policy has induced 43% of employed male smokers and 74% of employed female smokers in Washington to reduce their smoking on workdays; 48% of men and 53% of women said that the policy had reduced their overall smoking. The reported effect was stronger in no-smoking work sites, but not significantly so for women. This is a substantial population effect.

In relating policy to hiring, we found that for men in work sites with any policy, current smokers were more likely to have been hired before and less likely to have been hired after policy adoption than were

**TABLE 2—Association of Work Site and Worker Characteristics with Percentage of Employed Men and Women Subject to Smoking Restrictions**

Work-Site/Worker Characteristics	Men			Women		
	No Policy, % n (n = 113)	Restrictions, % (n = 288)	No Smoking, % (n = 195)	No Policy, % n (n = 62)	Restrictions, % (n = 251)	No Smoking, % (n = 319)
Work-site size, no. of employees						
< 10	154	37.2	32.1	181	25.1	49.2
10-100	266	14.7	29.7	275	3.4	55.9
> 100	176	8.9	37.0	176	3.6	49.6
		$\chi^2 = 65.47$ , $P < .0001$			$\chi^2 = 62.13$ , $P < .0001$	
Job classification						
Professional, managerial	199	15.9	43.9	234	4.5	61.0
Sales and clerical	71	23.8	37.0	203	14.7	52.3
Blue collar	241	23.0	19.3	121	9.3	41.1
Military	12	0.0	27.9	8	0.7	1.2
		$\chi^2 = 32.32$ , $P = .0001$			$\chi^2 = 26.34$ , $P = .0002$	
Urban/rural residence						
Live in Puget Sound region	288	17.5	35.7	312	7.6	34.6
Live in more rural area	308	22.6	26.2	320	13.6	47.3
		$\chi^2 = 6.97$ , $P = .0306$			$\chi^2 = 5.64$ , $P = .0595$	

*Note.* Numbers are unweighted sample sizes; percentages are weighted to match state population distribution on age and county residence.

TABLE 3—Tobacco Use and Smoking Habits of Employed Smokers, by Sex and Work-Site Policy Restrictiveness

Smoking Habits	Men (n = 596)			Women (n = 632)		
	No Policy	Restrictions	No Smoking	No Policy	Restrictions	No Smoking
All subjects						
No.	113	288	195	62	251	319
Current smoker, <sup>a</sup> %	34.7	31.4	15.6	20.7	29.7	14.9
Former smoker, <sup>b</sup> %	27.8	25.1	26.6	29.7	18.8	24.6
Never smoker, <sup>c</sup> %	37.5	43.5	57.8	49.6	51.6	60.5
		$\chi^2 = 25.6, P < .0001$			$\chi^2 = 16.81, P = .0021$	
Current smokers						
No.	31	88	28	17	75	51
No. of cigarettes smoked on workdays, mean (SD)	23.0 (14.8)	14.0 (10.2)	16.0 (10.1)	11.0 (7.0)	11.8 (6.5)	10.4 (5.8)
		$F = 9.92, P = .0001$			$F = .57, P = .5647$	
No. of cigarettes smoked on nonworkdays, mean (SD)	24.1 (16.5)	16.4 (11.1)	21.2 (12.5)	12.5 (11.5)	15.7 (9.9)	16.7 (9.1)
		$F = 6.39, P = .0021$			$F = .73, P = .4833$	
Current smokers in work sites with any policy						
No.	...	88	28	...	75	51
Policy effect on smoking						
Smoke less at work, %	...	47.2	70.4	...	75.1	90.0
Smoke the same at work, %	...	39.3	29.6	...	15.1	8.4
Smoke more at work, %	...	7.7	0.0	...	4.2	0.5
Don't know, %	...	5.8	0.0	...	5.7	0.2
		$\chi^2 = 8.17, P = .0425$			$\chi^2 = 4.98, P = .1733$	

Note. Numbers are unweighted sample sizes; percentages are weighted to match state population distribution on age and county residence.  
<sup>a</sup>For men, n = 147; for women, n = 143.  
<sup>b</sup>For men, n = 173; for women, n = 160.  
<sup>c</sup>For men, n = 276; for women, n = 329.

nonsmokers. This suggests that selection on the basis of smoking status may influence where a man works.

It is noteworthy that policy restrictiveness was unrelated to women's reported cigarette consumption, although most women worked in environments with policies. This is consistent with the observation that many women may smoke for effect and are less influenced by environmental cues.<sup>5</sup>

Although these data provide valuable information about the broad population impact of work-site smoking policies, they must be interpreted carefully. The data are cross-sectional, making attributions of causation impossible. Respondents' reports of their work site's policy cannot be validated, nor can self-reported data on smoking status, cigarette consumption, and policy impact on smoking, which may

be subject to bias. Also, these data come from a state with a low smoking prevalence (23.7% in 1989<sup>6</sup>), which may contribute to adoption of policies. Washington State has a clean indoor air act that is stringent but does not mandate adoption of smoking policies by private employers. The state and many local and county governments ban smoking in public workplaces.

These findings show that the great majority of employed Washingtonians are subject to restrictive smoking policies of the type that typically reduce exposure to environmental tobacco smoke.<sup>7</sup> These policies may also reduce smoking among the smokers they affect. □

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