

An Evaluation of the Workplace Smoking Bylaw in the City of Toronto

ABSTRACT

Random-digit dialing surveys were conducted before ($n = 1543$) and 8 to 9 months after ($n = 1430$) implementation of the city of Toronto workplace smoking bylaw. Compared with workers in the rest of metropolitan Toronto and persons not working outside the home, city workers evidenced more positive changes in regard to knowledge of the bylaw, its requirements, and enforcement provisions. City workers reported more changes in workplace restrictions and satisfaction with such restrictions. Patterns of smoking at work changed. (*Am J Public Health*. 1993;83:1342-1345)

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Introduction

Many workplaces have voluntarily implemented restrictions on smoking ranging from total bans to restrictions of smoking to designated areas.¹⁻⁴ Rapid changes in social norms regarding environmental tobacco smoke^{5,6} make additional legislated restrictions on workplace smoking likely.⁶⁻⁸

Most evaluations of workplace restrictions have focused on effects in particular work sites.^{9,10} However, the passage by the city of Toronto of a smoking bylaw¹¹ provided an opportunity to evaluate the effectiveness of such restrictions across a wide range of workplaces. The bylaw requires all employers to adopt and implement a smoking policy for each workplace and to totally prohibit smoking when employees cannot agree to other restrictions. Signs prohibiting or restricting smoking must be posted.

Metropolitan Toronto, with a noninstitutionalized population of 2 173 890 (1986 census), consists of six municipalities, only one of which was covered by the bylaw (city of Toronto, population 605 585). Thus, it was possible to test the hypothesis that the bylaw would have more impact on the attitudes, knowledge, and behavior of Toronto workers than on workers not covered by the bylaw (other workers) or those not working outside the home (nonworkers).

Methods

The target population was all residents of metropolitan Toronto 18 years of age or older. The sampled population consisted of those living in households with active telephone numbers (97% of the target population). Two independent surveys were conducted, one just before implementation of the bylaw and the other 8 to 9 months later. The first-stage units were households within metropolitan Toronto selected by means of random-digit dialing with at least six return calls. Second-stage sampling involved selection of the respondent from the household whose month and day of birth was most recent.¹²

A pretested schedule was used to collect data (in English, French, or Italian) during a 25-minute interview. (A copy of the interview schedule is available from the first author.) In the prebylaw interview, respondents were questioned about the existence of any workplace policy on smoking and their attitudes toward such a policy, their predictions of compliance with increased workplace regulations on smoking, and their knowledge of the impending bylaw and its content. The postbylaw interview examined knowledge of the existence of the workplace policy and its content, attitudes toward the policy, problems in implementation, compliance by smokers, changes in workplace and personal smoking behavior (smokers only), employer-implemented smoking cessation programs, and enforcement. Sociodemographic data were collected in both surveys.

Responses were tabulated as percentages and weighted according to household size and relative frequency in the 1986 census age-sex distribution for metropolitan Toronto. (A detailed assessment of sample representativeness is available from the second author.)

For variables measured in both surveys, differential bylaw effects among the three groups were assessed by the Breslow-Day test for odds ratio homogeneity¹³ or a likelihood ratio test for interaction in a polychotomous logistic regression model.¹⁴ Effects common to all groups were

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This paper was accepted June 3, 1993.

TABLE 1—Knowledge of the City of Toronto Workplace Smoking Bylaw

	Survey Responses, %								P	
	City Workers		Other Workers		Nonworkers		All Respondents			
	Prebylaw (n = 491)	Postbylaw (n = 450)	Prebylaw (n = 602)	Postbylaw (n = 546)	Prebylaw (n = 450)	Postbylaw (n = 434)	Prebylaw (n = 1543)	Postbylaw (n = 1430)	Differential	Overall
Is there a city of Toronto bylaw?										
Yes	64	89	61	75	51	69	59	78		
No	15	3	12	4	14	5	14	4	.01	.001
Don't know/refused	21	9	27	20	35	26	27	18		
Are all workplaces covered?										
Yes	36	50	37	41	30	33	35	42		
No	12	23	11	20	7	15	10	19	.004	.001
Don't know/refused	51	27	52	38	63	52	55	39		
Where is smoking allowed?										
Not allowed at all	9	8	7	7	5	5	7	7		
Allowed in certain areas	21	35	27	32	26	34	24	33	.001	.001
Up to each workplace	27	43	23	32	14	21	22	32		
Don't know/refused	43	15	43	29	56	41	47	28		
Who is responsible for bylaw enforcement?										
The police	9	7	10	5	11	10	10	7	.08	.003
Public health department	41	59	38	50	36	42	38	50	.05	.001
Bosses, managers, employers	58	78	53	65	42	58	51	67	.06	.001
Unions or employees association	34	42	31	35	30	33	32	37	.50	.006
Anyone else	12	20	12	16	7	11	10	16	.52	.001

assessed by the Mantel-Haenszel test or the Wald test for main effects in a logistic regression model. In regard to variables measured only after the bylaw, a chi-square test for proportions was used to compare city workers and other workers.

Results

In the prebylaw survey, 1543 (455 from the city of Toronto) of the 2257 eligible respondents completed the interview, a response rate of 68.4%. In the postbylaw survey, there were 1430 (418 from the city of Toronto) completions from 2287 eligible respondents (62.5% response rate). The distributions were similar to those of the 1986 census in terms of place of residence (28.6% resided in the city of Toronto and 71.4% resided in other areas of metropolitan Toronto).

Changes were larger in city workers than in other workers and nonworkers regarding knowledge of the existence of the bylaw, including awareness that all workplaces were covered and that the public health department was responsible for enforcement (Table 1). Compared with other workers, city workers responded more frequently that there had been changes in workplace smoking policy and that they were more satisfied with these changes (Table 2). Higher percentages of city workers indicated that notices about no-

TABLE 2—Immediate Effects of the Bylaw in the Workplace (Postbylaw Only)

	Survey Responses, %		P
	City Workers (n = 450)	Other Workers (n = 546)	
Changes have been made at work since the new law	48	32	.001
Workplace restrictions			
Had some restrictions before	31	27	
None before, changes since	36	23	.001
None before, no changes	33	50	
Satisfaction with changes ^a	44	27	.003
Workplace changes			
Put on quit-smoking programs			
During work times	15	10	.02
At lunch/after work	16	13	.12
Posted notices about nonsmoking areas	63	54	.003
Provided other information about no-smoking areas	23	16	.002
Provided pamphlets/lectures about smoking and health	25	23	.27
Provided incentive programs to help people quit smoking	13	9	.06
Anything else	9	6	.10

^aVery or somewhat satisfied.

smoking areas had been posted, that other information about no-smoking areas had been provided, and that smoking cessation programs had been offered during work. With regard to attitudes toward restrictions in the workplace, there were overall increases for support of laws restricting smoking (from 71% to 75%), for

rules being satisfactory (55% to 65%), and for each workplace determining its own restrictions (from 58% to 63%); however, no variations in the changes were found among the three groups.

Smokers appeared to be complying with restrictions on workplace smoking, although respondents reported some con-

TABLE 3—Perceptions of Conflict Resulting from Bylaw

	Survey Responses, %								P	
	City Workers		Other Workers		Nonworkers		All Respondents			
	Prebylaw (n = 313)	Postbylaw (n = 399)	Prebylaw (n = 367)	Postbylaw (n = 412)	Prebylaw (n = 230)	Postbylaw (n = 298)	Prebylaw (n = 910)	Postbylaw (n = 1109)	Differential	Overall
A lot of conflict	28	22	36	25	30	27	32	24	.04	.001
Some conflict	54	45	44	48	47	41	48	45		
Not much conflict	17	32	19	24	21	23	18	27		
Don't know/refused	1	1	1	3	2	9	1	4		

Note. Respondents who did not know about the new law are excluded.

TABLE 4—Changes in Smoking at Work (Postbylaw Only)

	Survey Responses, %		
	City Workers (n = 450)	Other Workers (n = 546)	P
A lot of smokers have:			
Quit	14	14	.79
Tried to quit	39	34	.10
People have cut down	52	44	.01
People smoke less at work but more outside	41	41	.93
Nonsmokers are more likely to ask people not to smoke	59	54	.19
People tend to smoke only in certain areas	72	59	.001

flict (Table 3). After implementation of the bylaw, city workers were more likely to report that restrictions did not create a significant amount of conflict. No increase in nonsmokers' requests to smokers to stop was found after passage of the bylaw. However, both city and other workers were more likely to report requests for smokers to leave the immediate area (15% to 21%) and less likely to report nonverbal disapproval (37% to 32%) or trying to move away from an area in which people were smoking (58% to 49%).

With regard to changes in workplace smoking, city workers were more likely than other workers to report that people had cut down on the amount smoked and that smokers tended to smoke in restricted areas. However, no difference was found in the proportions reporting that people had quit smoking (Table 4). There was some evidence that city workers had made more changes than other

TABLE 5—Personal Smoking Behavior at Work

	Survey Responses of Smokers, %				P	
	City Workers		Other Workers			
	Prebylaw (n = 141)	Postbylaw (n = 124)	Prebylaw (n = 194)	Postbylaw (n = 178)	Differential	Overall
Smoke at work	80	75	84	78	.71	.09
Location of smoking						
At desk/in work area	52	40	51	53	.08	.37
In another office/work area	34	35	45	34	.12	.08
Outside the building	49	42	52	53	.34	.58
In the restroom	25	25	38	32	.38	.29
In the corridor	23	21	28	24	.87	.29
In the lunchroom/cafe/tertia	48	42	57	53	.91	.24
Any other place	9	9	19	7	.03	.01
Workplace smoking behavior						
Don't smoke at work at all	20	25	16	22		
Don't smoke in work area	17	27	23	23		
Go ahead and smoke/just light up	46	37	52	43	.01	.18
Ask others/look around	13	5	4	11		
Other/don't know/refused	3	6	5	2		

workers with respect to smoking at their desk or work area (Table 5). Finally, no changes in perception of the prevalence of smoking among coworkers were found. However, both city and other workers were more likely to report not being bothered by smoking at work (62% to 70%).

Discussion

Implementation of the Toronto workplace smoking bylaw resulted, at least in the short term, in a number of changes consistent with those hypothesized. A longer term follow-up would be useful in determining whether the changes were permanent, increased over time, or reverted to prebylaw levels, and reduction in smoking prevalence may take some time to become evident.

Some caution is needed in interpreting these findings because of the dependence on perceptions and self-reports rather than direct observation, the less than 100% response rate, and the potential for exceeding the nominal type I error rate with a large number of statistical tests. □

Acknowledgments

This research was supported by a grant from the National Health Research and Development Program, Health and Welfare Canada (6606-3446). Personal support for Dr. Pederson and Dr. Bull was provided by National Health Research Scholar Awards, Health and Welfare Canada.

The Institute for Social Research, York University, conducted the telephone interviews and provided data tapes for analysis. The analyses were carried out by Kathy Sykora.

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