

Behavior Intentions of the Public after Bans on Smoking in Restaurants and Bars

ABSTRACT

Objectives. This study assessed the potential effect of smoke-free policies on bar and restaurant patronage.

Methods. Random-digit dialing techniques were used in surveying a representative sample of Massachusetts adults (n = 2356) by telephone.

Results. Approximately 61% of the respondents predicted no change in their use of restaurants in response to smoke-free policies, 30% predicted increased use, and 8% predicted decreased use. In turn, 69% of the respondents predicted no change in their patronage of bars, while 20% predicted increased use and 11% predicted decreased use.

Conclusions. These results suggest that smoke-free policies are likely to increase overall patronage of bars and restaurants. (*Am J Public Health* 1997;87:2042-2044)

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Introduction

Bars and restaurants have been shown to have high levels of employee exposure to environmental tobacco smoke,^{1,2} and this exposure has been linked to an increased risk of lung cancer among food service workers.² In response, communities throughout the United States have passed ordinances to restrict or eliminate smoking in bars and restaurants.³ As of August 1996, 191 cities, towns, and counties had enacted ordinances requiring smoke-free restaurants; 30 of these ordinances required that bars be smoke free as well.⁴ Despite the strong public health justification, the tobacco and restaurant industries have vigorously opposed such laws, arguing that smoke-free policies will result in economic hardship for bar and restaurant owners.⁵ This argument assumes that if bars and restaurants in one community eliminate smoking, smokers will choose to dine in neighboring communities or will not dine out as often. It neglects the possibility that an increase in patronage by nonsmokers could more than make up for the decrease in patronage by smokers.

To date, no published US study has explored potential changes in restaurant and bar patronage as a consequence of smoke-free policies. One Australian study has done so with regard to restaurant use,⁶ as have two unpublished studies conducted in the United States.^{7,8} The present study evaluated the potential impact of smoke-free policies on bar and restaurant patronage using data from the 1995 Massachusetts Adult Tobacco Survey. Our objectives were (1) to compare attitudes, beliefs, and behaviors related to environmental tobacco smoke among smokers and nonsmokers in Massachusetts; (2) to compare the frequency of use of bars and restaurants among smokers and nonsmokers in Massachusetts; and (3) to measure self-reported predictions of change in the frequency of bar and restaurant use among Massachusetts adults in response to a policy eliminating smoking in these establishments.

Methods

Sampling

Data for this study were derived from the Massachusetts Adult Tobacco Survey, a 20-minute telephone survey of a probability sample of Massachusetts housing units drawn via random-digit dialing techniques.^{9,10} On the basis of a household enumeration, a representative sample of adults 18 years of age or older was selected for interview. The survey was conducted monthly starting in March 1995. Approximately 225 interviews were conducted each month. This report includes data for the 10 months during 1995 (March through December) in which the survey was conducted. Interviews were completed with 76% of sampled households and with 81% of eligible respondents, resulting in a sample size of 2356.

Measures

The survey assessed personal tobacco use, as well as attitudes and beliefs related to smoking, environmental tobacco smoke, and tobacco control policies. Smokers were defined as those who reported having smoked at least 100 cigarettes in their life and who now smoked "every day" or "some days." The survey also assessed respondents' frequency of bar and restaurant use (never, less than once a month, once or twice a month, once a week, more than once a week), their past history of having avoided places because of tobacco smoke or because of smoke-free policies, and their predictions of how elimination of smoking in bars and restaurants would affect the frequency of their use of these establishments in the future.

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The effect of a smoke-free policy on the predicted frequency of respondents' bar and restaurant use was assessed with the following question: "Some cities and towns are considering laws that would make restaurants smoke free, that is, eliminating all tobacco smoke from restaurants; if restaurants allowed no smoking at all, do you believe you would use them more often, less often, or would it make no difference?" A comparable question assessed the impact on patronage of "clubs, bars, or lounges where alcohol is served."

Analysis

Data were weighted to adjust for the sampling design so that estimates would accurately reflect the adult population of Massachusetts. Chi-square analyses were conducted with SUDAAN.¹¹

Results

Predicted Impact of Smoke-Free Policies on Frequency of Bar and Restaurant Patronage

Approximately two thirds of respondents reported that their patronage of restaurants and bars would not change if these facilities were to become smoke free (see Table 1). Of those predicting a change in their restaurant patronage, the proportion predicting increased use was almost four times greater than the proportion predicting

decreased use (31% vs 7.9%). In terms of bar patronage, the proportion predicting increased use was almost twice as large as the proportion predicting decreased use (20% vs 10.8%). Few smokers reported that they would use bars and restaurants more frequently if such establishments were smoke free. However, since smokers constitute less than one quarter of the adult population, the number of adults who predicted a decrease in bar and restaurant patronage was smaller than the number who predicted an increase.

Three percent of the respondents reported that currently they do not eat out at all. Twenty-two percent of this group indicated that if restaurants were smoke free, they would dine out more. Thirty-two percent of respondents indicated that they never go to bars or clubs. Ten percent of this group indicated that if bars, clubs, and lounges were smoke free, they would patronize them more often.

Frequency of Patronage

Massachusetts smokers and nonsmokers are equally likely to be frequent restaurant and bar patrons (Table 1). Since there are more than four times as many nonsmokers in the population, nonsmokers constitute a larger proportion of both frequent restaurant users (82%) and frequent bar users (78%). Furthermore, frequent patrons were significantly more likely than infrequent patrons to predict an increase in their use of restaurants in response to

smoke-free policies (35% vs 25%; $\chi^2 = 6.34$, $df = 1$, $P < .05$). There was a similar relationship between frequency of bar patronage and predicted increase in usage, but the relationship was not statistically significant.

Concern about Environmental Tobacco Smoke

The predicted impact of smoke-free policies on restaurant and bar patronage is consistent with the attitudes, beliefs, and past behaviors of respondents. The vast majority of both nonsmokers and smokers reported that they believed environmental tobacco smoke could cause cancer in nonsmokers and was harmful to the health of children (Table 1). Sixty-four percent reported being bothered "a great deal" or "some" by environmental tobacco smoke. Although nonsmokers' reactions were significantly more negative than smokers', it is noteworthy that a substantial proportion of smokers expressed concern about environmental tobacco smoke. Nearly 40% of the respondents reported having avoided going to a place because of tobacco smoke; of these individuals, 34% indicated that they had avoided going to restaurants, and nearly 40% indicated that they had avoided going to bars or clubs (an estimated 13% and 15% of the population, respectively). In contrast, only 8.5% of respondents reported having ever avoided going somewhere because smoking was not permitted.

Table 1—Beliefs, Attitudes, and Behaviors in Relation to Restaurant and Bar Smoking Policies: 1995 Massachusetts Adult Tobacco Survey

	Total (n = 2356) % (95% CI)	Nonsmokers (n = 1895) % (95% CI)	Smokers (n = 461) % (95% CI)
Predicted impact of smoke-free policies on restaurant patronage			
Increase use	31.0 (27.1, 34.9)	37.7 (33.2, 42.2)	2.7 (.4, 5.0)
Decrease use	7.9 (5.5, 10.3)	2.2 (.9, 3.5)	31.9 (22.4, 41.4)
No change	61.1 (57.0, 65.2)	60.1 (55.5, 64.7)	65.4 (55.9, 74.9)
Predicted impact of smoke-free policies on bar/club patronage			
Increase use	20.0 (16.7, 23.3)	24.5 (20.5, 28.5)	0.6 (0, 1.6)
Decrease use	10.8 (8.1, 13.5)	2.9 (1.4, 4.4)	44.0 (34.3, 53.7)
No change	69.2 (65.2, 73.2)	72.5 (68.4, 76.6)	55.4 (45.7, 65.1)
Usual patronage patterns			
Use restaurant at least once a week	58.3 (54.0, 62.5)	58.8 (54.1, 63.5)	55.9 (46.5, 65.3)
Use bars/clubs at least once a month	40.8 (36.8, 44.8)	39.5 (35.0, 44.0)	46.3 (36.7, 55.9)
Reaction to ETS			
Believes ETS can cause cancer in nonsmokers	87.3 (84.4, 90.2)	91.2 (88.5, 93.9)	69.8 (60.2, 79.0)
Believes ETS is harmful to children	94.5 (92.6, 96.4)	96.4 (94.7, 98.1)	85.8 (78.8, 92.8)
Bothered more than "a little" by ETS	64.3 (60.0, 68.6)	71.1 (66.5, 75.7)	36.4 (27.6, 45.2)
Ever avoided a smoky place	39.6 (35.7, 43.5)	47.4 (42.9, 51.9)	6.6 (2.0, 11.2)
Ever avoided a smoke-free place	8.5 (6.3, 10.7)	4.7 (2.6, 6.8)	24.7 (17.3, 32.1)

Note. CI = confidence interval; ETS = environmental tobacco smoke.

Discussion

Although exposure to environmental tobacco smoke is an important occupational health hazard for bar and restaurant workers, many local governments have been reluctant to protect these workers. This is largely due to claims by the tobacco and restaurant industries that smoke-free policies would have adverse economic consequences by causing smokers to eat in neighboring communities or to eat out less often. The potential changes in location and frequency of dining behavior among nonsmokers have been largely ignored. Our analysis of a representative sample of Massachusetts adults suggests that smoke-free policies are likely to increase overall patronage of restaurants and bars. It also indicates that, contrary to tobacco industry assertions, smokers are no more likely than nonsmokers to be frequent restaurant or bar users. Furthermore, although patronage patterns are unrelated to smoking status, 78% of frequent bar users and 82% of frequent restaurant users are nonsmokers.

These results are consistent with the attitudes of Massachusetts adults, which demonstrate a widespread belief in the health risks associated with environmental tobacco smoke and high levels of personal discomfort with exposure to environmental tobacco smoke. In particular, the results are supported by the finding that while nearly 40% of adults reported avoiding places that were too smoky, fewer than 9% reported avoiding places because they were smoke free.

The results of this study are consistent with those of previous studies assessing self-reported predicted changes in frequency of restaurant use among adults after

implementation of a smoke-free policy.⁶⁻⁸

To our knowledge, this study is the first to report the baseline frequency of bar use and predicted changes after elimination of smoking among a representative sample of adults. We found a potential new market for bars among nonsmokers. Of the 32% of adults who do not presently frequent bars, 10% stated that they would start going if smoking were eliminated. In the relatively small state of Massachusetts, this amounts to approximately 120 000 people who would start going to smoke-free bars and clubs. We estimated that approximately 40 000 people who do not presently eat out at restaurants would start doing so if restaurants were smoke free.

Our findings must be interpreted with caution since respondents were reporting behavioral intentions in response to a hypothetical event. Despite this limitation, the results are consistent with econometric studies indicating no significant effects of smoke-free bar and/or restaurant ordinances on total bar and restaurant sales.^{12,13} This study provides further evidence that workers can be protected from hazards of environmental tobacco smoke without adverse consequences for bar and restaurant business. □

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References

1. *Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders.*

- Washington, DC: Environmental Protection Agency, 1992. EPA/600/6-90/006F
2. Siegel M. Involuntary smoking in the restaurant workplace: a review of employee exposure and health effects. *JAMA.* 1993;270:490-493.
3. Shopland DR, Pertschuk M. *Major Local Tobacco Control Ordinances in the United States.* Bethesda, Md: US Dept of Health and Human Services; 1993. NIH publication 93-3532.
4. *100% Smokefree Ordinances: August 28, 1996.* Berkeley, Calif: Americans for Nonsmokers' Rights; 1996.
5. Samuels B, Glantz SA. The politics of local tobacco control. *JAMA.* 1991;266:2110-2117.
6. Schofield MJ, Considine R, Boyle CA, Sanson-Fisher R. Smoking control in restaurants: the effectiveness of self-regulation in Australia. *Am J Public Health.* 1993;83:1284-1288.
7. *A Gallup Organization Public Opinion Survey on New Yorkers' Attitudes about Smokefree Dining.* New York, NY: Coalition for a Smokefree City; 1994.
8. *Public Opinion Surveys on Tobacco Control Policies for the Robert Wood Johnson Smokeless States Program, June 3, 1995.* Princeton, NJ: Mathematica Policy Research Inc; 1995.
9. Biener L, Roman AM. *1995 Massachusetts Adult Tobacco Survey.* Boston, Mass: Center for Survey Research; 1996.
10. Waksberg J. Sampling method for random digit dialing. *J Am Stat Assoc.* 1978;73:40-46.
11. Shah VS, Barnwell BG, Hunt PN, et al. *SUDAAN Professional Software for Multi-Stage Sample Designs.* Research Triangle Park, NC: Research Triangle Institute; 1992. Computer program.
12. Glantz SA, Smith LR. The effect of ordinances requiring smokefree restaurants on restaurant sales. *Am J Public Health.* 1994;84:1081-1085.
13. Centers for Disease Control and Prevention. Assessment of the impact of a 100% smoke-free ordinance on restaurant sales—West Lake Hills, Texas, 1992-1994. *MMWR Morb Mortal Wkly Rep.* 1995;44:521-525.