Published in final edited form as:

J Adolesc Health. 2009 July ; 45(1): 102–104. doi:10.1016/j.jadohealth.2008.12.023.

Young Adult Support for Clean Indoor Air Laws in Restaurants and Bars

Debra H. Bernat, Ph.D.^{1,*}, Elizabeth Klein, Ph.D.², Lindsey Fabian, M.P.H.³, and Jean L. Forster, Ph.D.³

¹ Center for Adolescent Nursing, School of Nursing, University of Minnesota

² Health Behavior and Health Promotion, School of Public Health, The Ohio State University

³ Epidemiology and Community Health, School of Public Health, University of Minnesota

Abstract

This study examined support for clean indoor air (CIA) laws among 2,044 young adults in Minnesota during 2006 and 2007. Two-thirds of young adult participants supported restaurant CIA laws and 40% supported bar/club CIA laws. A higher proportion of young adults living with CIA laws supported the laws, compared to young adults living without them. Nonsmokers, college students, those with nonsmoking friends, and those living with home smoking bans were consistently more supportive of both CIA laws.

Introduction

Individuals exposed to secondhand smoke (SHS) are at risk for negative health outcomes (1–3). SHS causes nearly 50,000 deaths annually due to heart disease and lung cancer (3). Smoke-free environments are considered the most effective measure for reducing SHS exposure (4, 5).

This study assesses support for restaurant and bar clean indoor air (CIA) laws among young adults. Few studies have examined support among young adults, and most show lower support than adults (3). Coverage by CIA laws is less common in restaurants and bars than in other workplaces, increasing the likelihood of SHS exposure in these settings (4). Young adult support is critical because they are more likely to work in the hospitality industry (6), and thus, may be disproportionately exposed to SHS.

Methods

Study Design

Data from a cohort originating from a stratified random sample of adolescents across Minnesota were analyzed (see www.epi.umn.edu/research/macc). Data were collected via telephone interviews between October 2006 and March 2007 (13th Round; 73% retention rate). Data were collected prior to Minnesota's statewide CIA law (effective 10/1/07).

*Corresponding author. School of Nursing, 5-140 Weaver-Densford Hall, 308 Harvard Street, Minneapolis, MN 55455, e-mail: dbernat@umn.edu, Phone: 612-625-0444, Fax: 612-625-7091.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Given the focus on young adult support for CIA laws, participants over 18, not in high school, and Minnesota residents were included (n=2,044; aged 18–23). The sample is primarily white (89.6%) and consists of slightly more females (51.9%).

Measures

Young adults who endorsed, “Smoking should not be allowed at all in restaurants and bars/clubs” were considered supportive of CIA laws. Past-month cigarette use, past-month alcohol use, college attendance, parent(s) smoke, friend(s) smoke, and home smoking ban were all dichotomous variables with “1” indicating the described attribute. Workplace smoking ban is a 3-level variable, distinguishing young adults who did not work (“0”), worked where smoking was not allowed (“1”) and worked where smoking was allowed (“2”). Existing CIA laws were coded for each participant based on city of residence, however participants living in areas with large exceptions were excluded (n=78).

Data Analytic Strategy

Support for restaurant and bar/club CIA laws was examined overall and by existing law. Chi-square and multivariate regression were used to assess differences in support by individual characteristics. Data were analyzed using SAS 9.1 (7).

Results

Two-thirds (66%) of young adults supported restaurant CIA laws and 40% supported bar/club CIA laws. A larger proportion of participants living in communities with CIA laws supported these laws versus participants living without them (see Table 1). This pattern was observed for both laws.

Chi-square analyses showed that participants who were female, older, in college, did not smoke or drink in the past 30 days, had non-smoking friends, and live and work with a smoking ban were more supportive of both laws, regardless of the law in their community (see Table 1). Parental smoking was associated with support for CIA laws only among those who did not live with CIA laws. Participants with non-smoking parents expressed greater support for CIA laws than participants with a parent who smoked.

The multivariate models, adjusted for age and gender, revealed similar results to the chi-square analyses (see Table 2). Past-month alcohol use and parent smoking, however, were not related to support for CIA laws. Working with a smoking ban was associated with greater support for restaurant CIA laws only.

Discussion

This study provides much needed information about support for CIA laws among young adults. Few studies have examined support among this age group, and most have been limited to college students (8,9). Support among this population-based cohort in Minnesota was higher than reported in previous nationwide studies. We found 66% of young adults supported restaurant CIA laws, higher than the 51% reported from a 2002 nationwide sample of 18–24 year olds; support for bar/club CIA laws was also higher (40% vs. 25%)(3). Findings suggest that support for restaurant and bar/club CIA laws may be increasing among young adults.

Similar to previous studies (3), support was higher for restaurant CIA laws compared to bar/club laws. Support also varied by demographic and personal characteristics. Further, support (for both laws) was higher among young adults living with existing laws, compared to those living without such laws. Importantly, these findings reflect support prior to Minnesota’s statewide CIA ordinance; support has been shown to increase after enactment (10).

This study has several limitations. First, this sample may not be representative of the young adult population in Minnesota. However, a large and diverse sample of young adults was drawn from a population-based cohort that likely provides a more accurate assessment than would have been obtained from a convenience sample. This is a cross-sectional study, so change over time was not assessed. Although this sample matches Minnesota demographics, it may not generalize to other areas in the U.S. Finally, the outcome variables were assessed with single item measures, which may not fully reflect attitudes towards CIA laws.

CIA laws are key to tobacco prevention, and these data suggest that support for CIA laws may be increasing among young adults. Furthermore, a greater proportion of young adults living with CIA laws support those laws, suggesting that they are satisfied with the laws when they are enacted.

Acknowledgments

The project described was supported by award number R01-CA086191 (Jean Forster, Principal Investigator) from the National Cancer Institute and by award number RC-2007-0018 from ClearWay Minnesota (Debra Bernat, PI). The content is solely the responsibility of the authors and does not necessarily represent the official view of the National Cancer Institute or ClearWay Minnesota.

This research was funded by the National Cancer Institute (R01 CA86191-03) and ClearWay Minnesota (RC-2007-0018). The University Institutional Review Board approved this study and participants consented to participate.

References

1. Hackshaw AK, Law MR, Wald NJ. The accumulated evidence on lung cancer and environmental tobacco smoke. *BMJ* 1997;315(7114):980–8. [PubMed: 9365295]
2. Law MR, Morris JK, Wald NJ. Environmental tobacco smoke exposure and ischaemic heart disease: an evaluation of the evidence. *BMJ* 1997;315(7114):973–80. [PubMed: 9365294]
3. U.S. Department of Health and Human Services. The health consequences of involuntary exposure to tobacco smoke: A report of the Surgeon General. Atlanta, Georgia: 2006.
4. National Cancer Institute. Smoking and Tobacco Control. Bethesda, MD: 2000. State and local legislative action to reduce tobacco use. Monograph No. 11
5. Siegel M. Involuntary smoking in the restaurant workplace. A review of employee exposure and health effects. *JAMA* 1993;270(4):490–3. [PubMed: 8320789]
6. Leibert A. Minnesota Department of Employment and Economic Development. Teen Summer Employment Outlook. 2008
7. SAS Institute Inc. Cary. North Carolina, USA:
8. Loukas A, Garcia MR, Gottlieb NH. Texas college students' opinions of no-smoking policies, secondhand smoke, and smoking in public places. *J Am Coll Health* 2006;55(1):27–32. [PubMed: 16889312]
9. Rigotti NA, Regan S, Moran SE, Wechsler H. Students' opinion of tobacco control policies recommended for US colleges: a national survey. *Tob Control* 2003;12(3):251–6. [PubMed: 12958381]
10. Clancy L. Ireland's workplace smoking ban. *Breathe* 2007;3:237–295.

Table 1

Support for clean indoor air laws for restaurants and bars/clubs by policy and presence of the law

	% Support for Clean Indoor Air Policies in Restaurants ¹		% Support for Clean Indoor Air Policies in Bars/Clubs ¹	
	Living with Restaurant CIA law (N=354)	Living without Restaurant CIA law (N=1381)	Living with Bar/Club CIA law (N=309)	Living without Bar/Club CIA law (N=1381)
Overall Support	70.8	63.1	48.7	36.9
<u>Demographics</u>				
Gender	X ² =15.12 ^{**}	X ² =41.69 ^{**}	X ² =15.52 ^{**}	X ² =39.39 ^{**}
Female (51.9%)	81.7	70.5	60.7	43.5
Male (48.1%)	63.0	53.7	38.1	27.3
Age	X ² =0.03	X ² =5.75 [*]	X ² =6.25 [*]	X ² =7.74 ^{**}
18–20 (58.3%)	71.6	59.8	44.3	32.7
21+ (41.7%)	72.5	66.2	58.7	40.0
<u>Behavior</u>				
Past 30-day smoking	X ² =35.01 ^{**}	X ² =169.51 ^{**}	X ² =30.15 ^{**}	X ² =108.38 ^{**}
Yes (30.4%)	48.9	36.1	27.5	14.6
No (69.6%)	81.0	73.5	61.1	44.1
Past 30-day alcohol use	X ² =9.53 ^{**}	X ² =8.44 [*]	X ² =1.19	X ² =13.16 ^{**}
0 days (29.1%)	83.0	67.6	49.4	41.4
1–5 days (43.2%)	70.3	61.9	51.9	35.9
6+ days (27.7%)	64.4	57.4	49.5	28.8
<u>Environmental Factors</u>				
Enrolled in college	X ² =4.91 [*]	X ² =51.72 ^{**}	X ² =7.65 ^{**}	X ² =55.96 ^{**}
Yes (62.7%)	75.4	70.1	56.2	43.6
No (37.3%)	63.8	50.9	39.6	23.8
Parent(s) smoke	X ² =1.99	X ² =16.38 ^{**}	X ² =1.16	X ² =23.35 ^{**}
Yes (31.0%)	66.3	55.0	48.8	26.9
No (69.0%)	73.9	66.3	51.3	40.3
# Friends who smoke	X ² =16.35 ^{**}	X ² =92.17 ^{**}	X ² =25.01 ^{**}	X ² =57.69 ^{**}
0 (34.9%)	84.6	79.8	69.7	49.3
≥1 (65.1%)	64.6	53.4	39.9	28.6
Home smoking ban	X ² =2.12	X ² =48.81 ^{**}	X ² =7.98 ^{**}	X ² =33.32 ^{**}
Yes (76.0%)	73.8	67.6	55.9	39.9
No (24.0%)	65.4	45.9	37.9	22.2
Workplace smoking ban ²	X ² =5.29 [*]	X ² =25.84 ^{**}	X ² =4.59 [*]	X ² =23.52 ^{**}
Yes (71.5%)	72.2	66.8	49.7	39.4
No (28.5%)	53.7	50.0	30.8	23.8

**
p<.01*
p<.05

¹Support indicates those who reported that smoking should not be allowed at all in each location

²Reported for those who indicated working 6+ hours per week in a paid job.

Table 2

Odds ratios and 95% confidence intervals from multivariate models predicting support for CIA laws

Characteristic	Support for Clean Indoor Air Policies in Restaurants		Support for Clean Indoor Air Policies in Bars/Clubs	
	OR	95% CI	OR	95% CI
Living with policy	1.57 ^{**}	(1.16, 2.12)	2.01 ^{**}	(1.49, 2.71)
Behavior				
Past 30-day smoking	.31 ^{**}	(.24, .40)	.34 ^{**}	(.25, .46)
Past 30-day alcohol use	1.00	(.85, 1.18)	.95	(.80, 1.11)
Environmental Factors				
Enrolled in college	1.37 [*]	(1.07, 1.76)	1.77 ^{**}	(1.36, 2.30)
Parent smoking	1.09	(.85, 1.41)	.94	(.72, 1.21)
Friend smoking	.52 ^{**}	(.40, .69)	.67 ^{**}	(.53, .86)
Home smoking ban	1.76 ^{**}	(1.35, 2.29)	1.71 ^{**}	(1.29, 2.27)
Workplace smoking ban ^{<i>l</i>}	1.36 [*]	(1.02, 1.82)	1.31	(.96, 1.80)

^{**}
p<.01^{*}
p<.05

Note: All models adjusted for age and gender.

^{*l*} Compares participants who work with a smoking ban to those who work without a smoking ban. Comparisons with young adults who do not work are not shown.