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Brief Report

Prevalence and predictors of smoke-free policy implementation and support among owners and managers of multiunit housing

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Abstract

Introduction: Exposure to secondhand smoke causes disease and premature death. Although many municipalities have instituted policies prohibiting smoking in public areas, personal living areas remain largely unregulated. Individuals who reside in multiunit housing (MUH) facilities where smoking is permitted are particularly susceptible to involuntary exposure. This study assessed the prevalence and predictors of smoke-free policy implementation and support among owners and managers of MUH throughout Western New York State.

Methods: A telephone survey was administered to a sample of owners and managers of MUH buildings in the Erie and Niagara counties, New York. A total of 127 respondents completed the survey between March and July 2008 (62% response rate). Logistic regression was used to assess predictors of policy implementation and support, while adjusting for participant smoking status, quantity of units owned/managed, government subsidy status, as well as building age, construction type, and size.

Results: Only 13% of participants reported smoking restrictions within any of their buildings. Among those without a smoke-free policy, 75% would be interested in restricting smoking in at least one of their units, with interest being significantly higher among participants with government-subsidized units (odds ratio = 3.12, 95% *CI* = 1.14–8.52). Primary barriers to policy implementation included concern over increased vacancy (27%) and a decreased market base (21%).

Discussion: Few Western New York MUH owners and managers have implemented smoke-free policies in their buildings, but most are receptive to doing so. Therefore, opportunities exist for interventions to enhance policy acceptance, implementation, and enforcement among these individuals.

Introduction

Exposure to secondhand smoke (SHS) poses a significant and pervasive health risk to both adults and children (U.S. Department of Health and Human Services [USDHHS], 1986, 2006). As of July 2009, 31 states have promulgated smoke-free air laws that prohibit smoking inside workplaces, bars, and/or restaurants, with 17 of these states having comprehensive laws in effect that require all three of the aforementioned venue types to be 100% smoke free (Americans for Non-Smokers' Rights [ANR], 2009). However, the implementation and strengthening of these laws has left unregulated areas, including personal living areas, as primary sources of SHS exposure for many individuals. *The Surgeon General's Call to Action to Promote Healthy Homes* emphasizes the importance of instituting smoke-free home policies to reduce involuntary exposure to SHS (USDHHS, 2009). Such policies have also been shown to increase smoking cessation and decrease cigarette consumption in adult smokers (Mills, Messer, Gilpin, & Pierce, 2009).

The estimated 80 million Americans who live in close proximity to one another in multiunit housing (MUH) are particularly susceptible to SHS exposure (Ellis et al., 2009; U.S. Census Bureau [USCB], 2003). Heating, ventilation, and air conditioning systems are capable of distributing SHS throughout indoor environments (USDHHS, 2006). Moreover, most particles emitted from burning cigarettes are easily inhaled into the lungs (Klepeis, Apte, Gundel, Sextro, & Nazaroff, 2003) and capable of

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infiltrating through building cracks (Liu & Nazaroff, 2003; Thatcher, Lunden, Revzan, Sextro, & Brown, 2003). Nearly half of MUH residents report that SHS has entered their unit from somewhere else in or around their building (Hennrikus, Pentel, & Sandell, 2003; Hewett, Sandell, Anderson, & Neibuhr, 2007), and detectable levels of nicotine, a biomarker of SHS, have also been documented in smoke-free units within MUH buildings in which smoking is permitted (Kraev et al., 2009). Therefore, implementing a smoke-free building policy would be the most effective method for reducing SHS exposure. The adoption of such a policy would also have the secondary benefit of increasing the prevalence of smoke-free homes.

Although there is currently an extensive amount of literature documenting smoke-free policy support and implementation in public areas (ANR, 2009; Borland et al., 2006; Hyland et al., 2009), literature assessing these issues with respect to homes, and more specifically MUH, is limited (Hennrikus et al., 2003; Hewett et al., 2007). To our knowledge, only one study has assessed MUH owners' and managers' preferences and practices regarding smoke-free building policies. Hewett et al. administered a telephone survey to a convenience sample of 49 MUH decision makers in Minnesota and found that nearly 41% had designated one or more smoke-free buildings; among those who had never designated smoke-free buildings, nearly three quarters (72%) were unaware that such buildings existed. To our knowledge, no study has assessed predictors of smoke-free policy implementation and support among MUH decision makers.

Scientific inquiry and community-based advocacy serve a critical role in promoting widespread adoption of smoke-free policies (Eriksen & Cerak, 2008). Through active collaboration, researchers and key stakeholders can combine scientific data with local knowledge to identify approaches for sustainable policy development and implementation (Hemmati, 2002). Consequently, the provision of credible scientific information that is relevant to major decision makers could lead to the enhanced diffusion of smoke-free policies in MUH facilities. In an effort to establish this evidence base, the present study assessed the nature, extent, and predictors of smoke-free policy implementation and support among owners and managers of MUH throughout Western New York State.

Methods

A survey sampling service (ASDE Inc., Quebec, Canada) was employed to identify subjects using the Occupational Safety and Health Administration's Standard Industrial Classification (SIC) System. All individuals who met the following eligibility criteria were invited to participate in a cross-sectional survey in March 2008: (a) classification under SIC code 6513 ("operators of apartment buildings") and (b) management or ownership of a MUH property within the New York State counties of Erie or Niagara.

All the 241 subjects who met the prescribed eligibility criteria were invited to participate, of which 115 completed a telephone survey between March and June 2008. The survey comprised 57 questions concerning participants' preferences and practices related to smoke-free buildings policies, including perceived barriers and motivators of implementation among those with no current policy. Paper survey forms were subsequently sent to 70 subjects who were unable to be reached after five callback attempts and who had not previously refused to participate via telephone. Among these subjects, 12 completed and returned the paper survey form. In all, 127 subjects completed either a phone or paper survey, yielding a response rate of 62%, excluding 36 subjects for whom both phone and mail contact was unattainable. All survey participants were provided with $50 compensation.

Data analyses were conducted using SPSS version 14.0 (SPSS Inc., Chicago, IL). Descriptive analyses, including frequency counts, were assessed and reported for key measures, including policy implementation and interest. A binary logistic regression model was also constructed to identify significant predictors of these measures. Dependent variables included self-reported implementation of a policy restricting smoking inside all the living units within any one building (yes, no) and self-reported interest in implementing a smoke-free policy (very/somewhat/a little interested/not at all interested). Assessed predictors included participant smoking status (nonsmoker or smoker), quantity of units owned and/or managed (2–49, 50–99, 100–149, or 150 units), U.S. Department of Housing and Urban Development (HUD) subsidy status (no HUD units or HUD units), as well as average building age (≤10, 11–20, 21–30, or >30 years), size (2–4, 5–9, or 10 units), and construction type (all masonry, all wood-frame, or other).

Results

When compared with those who completed the paper survey, participants who completed the telephone survey were significantly more likely to manage and/or own units subsidized through HUD (χ^2, $p = .043$). Method of survey completion was unrelated to participant smoking status, quantity of units owned/managed, or building age, construction type, and size.

Prevalence of policy implementation and support

A total of 9% of respondents reported that smoking was prohibited inside all the living units that they owned and/or managed, and an additional 2% reported smoking restrictions within at least one of their buildings. Among the 110 respondents who reported that there were currently no smoking restrictions in any of their buildings, 75% indicated an interest in implementing a smoke-free policy.

Predictors of policy implementation and support

Respondents who reported that smoking was prohibited inside all the living units within at least one of their buildings were significantly less likely to manage and/or own a building greater than 30 years old (odds ratio [*OR*] = 0.09, 95% *CI* = 0.01–0.79); policy implementation was unrelated to participant smoking status, quantity of units owned/managed, HUD status, or building construction type and size. Among respondents who reported having no smoking restrictions in their buildings, those who manage and/or own units subsidized through HUD were significantly more likely to report an interest in implementing a smoke-free policy (*OR* = 3.12, 95% *CI* = 1.14–8.52); policy interest was unrelated to participant smoking status, quantity of units owned/managed, or buildings age, construction type, and size (Table 1).

Table 1. Predictors of smoke-free policy interest among owners and managers of multiunit housing in which smoking is currently permitted, binary logistic regression, *n* = 110

Predictor	*n*	Percent	*OR*	95% *CI*
Total units owned/managed				
2–49	22	81.8	1.00	
50–99	20	70.0	0.47	0.10–2.27
100–149	25	64.0	0.36	0.07–1.78
150+	43	79.1	0.80	0.19–3.41
Average building size				
2–4 units	24	79.2	1.00	
5–9 units	28	75.0	0.78	0.18–3.36
10+ units	58	72.4	0.62	0.16–2.36
Average building age, years				
≤10	9	66.7	1.00	
11–20	13	76.9	1.42	0.17–11.9
21–30	20	95.0	5.07	0.36–72.1
>30	68	69.1	0.84	0.15–4.87
Building construction				
All masonry	70	72.9	1.00	
All wood-frame	32	75.0	0.92	0.30–2.84
Other	8	87.5	1.51	0.15–15.3
HUD subsidy status				
No HUD units	50	62.0	1.00	
HUD units	**60**	**85.0**	**3.12**	**1.14–8.52**
Participant smoking status				
Nonsmoker	95	76.8	1.00	
Smoker	15	60.0	0.47	0.13–1.68

*Note.*Statistically significant OR noted in bold. *OR* = odds ratio, HUD = U.S. Department of Housing and Urban Development. Adjusted for all covariates listed in table.

Table 2. Perceived barriers and motivators of smoke-free policy implementation among owners and managers of multiunit housing in which smoking is currently permitted

Perceived barriers and motivators (*n* = 110)	Percent
Primary concern about policy implementation[a]	
Higher vacancy rate	27
Decrease in market size of potential tenants	21
Federal, state, or local legality of policy	18
Increased staff time for enforcement	7
Increased legal costs associated with enforcement	6
Higher turnover rate	5
Any[b] motivators for policy implementation	
Studies show high demand for smoke-free units	85
Knew it would reduce fire and insurance rates	85
Knew it would reduce tenant turnover rate	83
Tenants requested that policy be implemented	73
Could charge higher rent for smoke-free units	71
Offered free advertising for smoke-free units	48

[a]Eight percent of respondents reported "no concern" and 8% reported "don't know."

[b]Respondents were asked to check all that apply.

Barriers and motivators of smoke-free policy implementation

Among owners and managers with no smoking restrictions in their buildings, primary reported barriers to smoke-free policy implementation included concerns over higher vacancy rates, a decrease in the market size of potential tenants, and the federal, state, or local legality of such a policy. A total of 8% of respondents with no smoking restrictions indicated that they had no concerns about implementing a smoke-free policy in their buildings.

The most commonly reported motivators for policy implementation among owners and managers with no smoking restrictions in their buildings were evidence of high tenant demand for smoke-free units and knowledge that the policy would reduce either insurance or tenant turnover rates (Table 2).

All the 17 respondents with smoking restrictions in at least one of their buildings indicated that it was "likely" they would retain their smoke-free policy.

Discussion

The findings of this study suggest that only a limited number of managers and owners of MUH in Erie and Niagara counties have implemented smoke-free policies in their buildings, but most would be interested in doing so. Consequently, opportunities exist for interventional efforts to enhance smoke-free policy implementation and enforcement among these individuals.

In order to ensure maximum efficacy, such interventions may be directed toward particular subgroups, such as operators of buildings with government-subsidized housing units. In the present study, respondents who manage and/or own units subsidized through the HUD were significantly more likely to report an interest in implementing a smoke-free policy. This finding could be attributed to the disproportionately higher rates of smoking (Giovino et al., 2009) and MUH residency (USCB, 2008) among individuals of lower socioeconomic status. More specifically, owners and managers of units subsidized through HUD may experience more tenant complaints associated with SHS. Among participants with no smoke-free policy in the present study, those with HUD-subsidized units were significantly more likely than those without HUD units to receive complaints from tenants about the smell of tobacco smoke in their apartments "all the time" or "sometimes" (28.3% vs. 12.0%, χ^2, $p = .036$).

Interventional efforts for enhanced smoke-free policy adoption should also capitalize upon key motivators, including interest among tenants. Population-based surveys of MUH residents previously conducted by Hennrikus et al. (2003) and Hewett et al. (2007) have shown high demand for smoke-free buildings, with 64% and 72% of respondents reporting that they were either strongly or somewhat interested in living in a smoke-free building, respectively. Therefore, advocacy efforts should focus on promoting smoke-free building policies among MUH tenants and urging these individuals to request that such policies are implemented in their buildings.

Several barriers to smoke-free policy adoption were also identified, including concerns over higher vacancy rates, a decreased market segment, and the legality of restricting smoking inside personal living areas. These findings suggest that lack of knowledge is a primary barrier to smoke-free policy implementation. This supposition is substantiated through the work of Hewett et al. (2007), who found that decision makers who had designated smoke-free buildings reported almost entirely neutral or positive effects on vacancy rates and rental market size. Moreover, there are no federal or state laws that prohibit owners and managers of MUH facilities from restricting smoking inside their buildings and the act of smoking is not a protected activity under the U.S. Constitution (Schoenmarklin, 2005). The legal permissibility of such policies includes units subsidized through HUD, which contain high proportions of older occupants and families with children (U.S. Department of Housing and Urban Development [USDHUD], 2009b). In a recently issued memorandum, HUD confirmed that elderly and young populations are particularly vulnerable to the adverse health effects of smoking and stated that Public Housing Authorities are permitted and encouraged to implement nonsmoking policies in their buildings (USDHUD, 2009a). Therefore, interventions to dispel the above misperceptions and to confirm the legality of smoking restrictions in MUH may enhance the diffusion of such policies.

A limitation of this study is that it included subjects from only two counties within New York State, which may restrict generalizability of the findings to other localities. However, participants were recruited using a nationally recognized code employed by federal, state, and local governments to monitor multiunit residential building activities and all the individuals classified under this code within the sample frame were invited to participate. The primary strengths of this study are its sample size, subject selection, and the breadth of data that were collected. To our knowledge, this study is the first to assess both the prevalence and the predictors of smoke-free policy implementation among owners and managers of MUH. Moreover, the study employed a sample size that was considerably larger than that of the only other published study on this topic, which assessed attitudes toward smoke-free building policies among a convenience sample of 49 key decision makers in the management of rental properties across Minnesota.

In conclusion, the present research indicates that few managers and owners of MUH have designated smoke-free buildings but most are receptive to doing so. These findings underscore an opportunity for advocates to promote smoke-free building policies among tenants and to assist owners and managers of MUH with accepting, implementing, and enforcing such policies.

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Declaration of Interests

None declared.

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