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Do Sociodemographic Factors, Smoking Status, and Beliefs about the Health of Others Predict Attitudes about Smoke-free Air Policies in Various Settings?

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<Abstract>
Objectives: This study examined the extent to which attitudes about smoke-free air policies (SFAPs) in bars/restaurants, workplaces, all public places, and motor vehicles when minors are present can be explained by individuals' sociodemographic characteristics, smoking status, and beliefs about the health of others. **Methods:** Data were gathered from 359 individuals age 18 or older who attended the Lawrence County Fair in Indiana, United States, in July, 2009, an area where there were no SFAPs in place at the time of survey administration. **Results:** Multinomial logistic regression analyses indicated that perceived severity of secondhand smoke (SHS) on others, perceived responsibility of smokers for the harm their SHS causes to others, and perceived susceptibility of others to SHS exposure, along with education level and smoking status, significantly predict opposition to SFAPs in this population. **Conclusions:** The results of this exploratory study suggest the need for additional research related to attitudes about health policies as well as to the practical applications of these findings for smoke-free air advocacy.

Key words: Smoke-free air, Health behavior, Smoking, Secondhand smoke, Policy

Ⅰ. Introduction

During the past several decades, public health practitioners have explored numerous ways to reduce the substantial morbidity and mortality that result from both primary and secondary cigarette smoke, the latter often referenced as secondhand smoke (SHS). Among the most effective of these methods is a "smoke-free air policy" (SFAP), also known as a smoking ban (Eagan, Hetland, & Aaro, 2006; Loewenberg, 2006; Cesaroni et al., 2008). The first smoke-free air legislation in the United States was passed in Minnesota in 1974 (Levy & Friend, 2001). However, research on attitudes about these types of policies, much of which is recent (Torabi & Seo, 2004; Seo, 2005; Mei et al., 2009), remains exploratory.

Research about SHS and SFAPs is especially relevant given the current evolution of policy-related public health strategies. U.S. Centers for Disease Control and Prevention (CDC) leaders recently published articles supporting the use of Health Impact Assessments (HIAs) and a wide range of policies that directly and indirectly influence population health, including specific discussion of SFAPs (Collins, Koplan, & Marks, 2009; Frieden, 2010). Further, the World Health Organization's (2008) report, "*Closing the gap in a generation: Health equity through action on the social determinants of health*," argues that social protection systems, of which SFAPs might be an example, are a social right.

In the U.S., both state and local governments independently have sought to pass and implement these policies, a process that requires support from those who would fall under the policy's purview. Many studies measure population attitudes about

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SFAPs, especially in terms of support for or opposition to such policies. However, very few studies examine *predictors* of attitudes about SFAPs, which might have practical relevance for both public health professionals and individuals promoting policy passage and implementation. Several researchers (Torabi & Seo, 2004; Seo, 2005; Mei, et al., 2009) have conducted studies primarily about sociodemographic predictors of attitudes about SFAPs in one or more specific settings, such as bars and restaurants, but have not yet promoted a broader theoretical framework.

A better understanding of predictors of attitudes about SFAPs may help to bridge the gap between health behavior theory and policy-driven approaches to improve health. Specifically, this study both modifies and applies selected components of existing health behavior models to conceptualize and explore *how individuals relate to the health of others*. These components, in turn, are analyzed as part of models designed to predict attitudes about SFAPs in each of 4 distinct settings: bars/restaurants, workplaces, all public places, and vehicles when minors are present.

Traditional health behavior models, such as the Health Belief Model (HBM), often are used to predict whether an individual intends to take some action that affects *his or her own health*. This study modifies selected constructs from existing health behavior models and uses them in a new framework – for example, "perceived severity" from the HBM is operationalized herein as "perceived severity of the effects of SHS *on others*," which assesses the extent to which people feel that SHS harms *others*. We similarly modify two additional health behavior constructs in creating the theoretical framework for this study, which explores whether attitudes about SFAPs can be predicted by sociodemographic variables (sex, employment status, race, education level, and partner's education level), smoking status, and theory-derived measures about *the health of others* (perceived susceptibility of others to SHS, perceived severity of SHS on others, and perceived responsibility of smokers for the effects of their SHS on others). We analyzed data collected at the 2009 Lawrence County (Indiana) Fair, located in a county where no national, state, county, or local SFAPs existed at the time of survey administration.

1. Morbidity and Mortality from SHS

The CDC (2009) estimates that 443,000 people die in the U.S. each year from adverse health effects of cigarette smoking, of which 49,400 deaths can be attributed to exposure to SHS. The literature finds "clear dose-response relationships consistent with a causal association… between exposure to SHS…and the development of lung cancer among never smokers" (Brennan et al., 2004, p. 128). Exposure to SHS "promotes tumor angiogenesis and growth" (Zhu et al., 2003, p. 194) and is associated with heart disease (He et al., 1999), asthma (Eisner et al., 2005), breast cancer (Johnson, 2005), nicotine dependence (Belanger et al., 2008), and both immediate and long-term risks to children with serious chronic illness (Block, Haverkos, & Jobe, 2007).

2. Smoke-Free Air Policies

During the past few years, much of the scientific literature focusing on cigarette smoking and SHS prevention has shifted to SFAPs, and away from other methods, such as mass-media campaigns (Davis, Nonnemaker, & Farrelly, 2007) and cigarette taxation (Fichtenberg & Glantz, 2002). When implemented, SFAPs have been effective both in reducing morbidity associated with cigarette smoking and SHS and in some cases the prevalence of such behavior. Internationally, 28 countries have adopted 100% smoke-free legislation (Hyland, Barnoya, & Corral, 2012). Researchers have documented numerous positive health outcomes in these countries, including improvements in the health of service workers in Norway (Eagan et al., 2006), reductions in sales of cigarettes in Spain (Loewenberg, 2006), and reductions in acute coronary events in Italy (Cesaroni et al., 2008). Similar outcomes have been reported in Scotland (Menzies et al., 2006, p. 1742) and in Ireland (Mulcahy, Evans, Hammon, Repace, & Byrne, 2005; Goodman, Agnew, McCaffrey, Paul, & Clancy, 2007; Fong, Hyland, Borland, Hammond, Hastings, et al., 2006).

In the United States, 36 states and Washington D.C. have

passed SFAPs for one or more locations (i.e., workplaces) (American Nonsmokers' Rights Foundation, 2012). After significant debate, the state of Indiana enacted smoke-free legislation for public places, workplaces, government vehicles, and within 8 feet of public entrances to those places, on July 1, 2012 ("House Enrolled Act No. 1149," 2012), although this legislation provides for a wide variety of exceptions. Research examining county SFAPs across 117 locations in the United States suggests that youth who live in a county covered by an SFAP and who are not exposed to SHS at home exhibit a lower prevalence of detectable cotinine than those who live in a county that is not covered by an SFAP (Dove, Dockery, & Connolly, 2010). Furthermore, four states have banned smoking in vehicles in which minors are present (Cummings, 2009). At least one study suggests that air nicotine concentrations can be high enough in cars used by smokers to warrant SFAPs for motor vehicles carrying passengers (Jones et al., 2008), and another identifies unhealthy levels of tobacco smoke pollution in vehicles after a single cigarette has been smoked (Sendzik, Fong, Travers, & Hyland, 2009).

3. A Theory-Driven Approach to Smoke-Free Air Policies

Many individual-level theories about smoking behavior focus on "preventive health behaviors," which is a concept derived from formative work by Kasl and Cobb (1966), who define a health behavior as "any activity, undertaken by a person who perceives himself to be healthy, for the purpose of preventing illness or detecting it in an asymptomatic state." The HBM focuses on "the belief that a specific health action will prevent or ameliorate illness" *for the person who performs the behavior* (Janz & Becker, 1984). Similarly, the Theory of Reasoned Action (TRA) focuses on "behavioral intentions, which are conceptualized as the immediate antecedents to behavior, [and] are a function of salient information or beliefs about the likelihood that performing a particular behavior will lead to a specific outcome" *for the person who performs the behavior* (Madden, Ellen, & Ajzen, 1992, p. 3). However, it is possible that health behavior theories need not focus only on health behaviors that might prevent or mitigate adverse health outcomes for the person who performs the behavior; rather, *they might focus on behaviors that might affect health outcomes among others*. This expansion of health behavior theories' purview is not without precedent. Previously, for example, the HBM primarily addressed preventive health behaviors and sick-role behaviors (Janz & Becker, 1984). More recently, the use of the HBM's constructs also has expanded to predict unhealthy behaviors (i.e., smoking initiation; Song et al., 2009). This distinction between predicting preventive and unhealthy behaviors is important to make – it demonstrates the potential for the HBM's predictive constructs to be further adapted.

Our exploratory study examines the extent to which sociodemographic variables, smoking status, and *beliefs about the health of others* might predict attitudes about SFAPs. Multiple studies use attitudes about policy as an outcome variable (Torabi & Seo, 2004; Seo, 2005; Thomson & Wilson, 2009; Mei et al., 2009). However, these studies focus primarily on sociodemographic predictors of these attitudes. This study importantly expands the categorical purview of beliefs about health (i.e., "perceived susceptibility of oneself") to focus on *the health of others* (i.e., "perceived susceptibility of others") and includes these variables in its analyses.

Ⅱ. Methodology

1. Data Collection

Three researchers randomly approached individuals at locations within the Lawrence County Fair (including walking paths, food courts, and event seating) between July 11th and 17th, 2009, and solicited participation using a standardized script. Data were collected only from individuals who were old enough to provide informed consent and to vote (i.e., those age 18 or older). Individuals who agreed to participate first were given a study information sheet and then the survey instrument, a clipboard, a pen, and a blank envelope into which to place their completed survey. To ensure an accurate count of all who were approached to complete the survey, researchers kept a written

tally of participants and non-participants. To increase the response rate, the instrument purposely was designed to be brief (Kalantar & Talley, 1999). The survey instrument was confined to 1 page, front and back, containing 20 items, of which 12 were used for analyses described in this manuscript (see Tables 1 and 2). No incentives were provided for participation. This study was approved by Indiana University, Bloomington's IRB (#0906000451).

2. Instrument Reliability/Validity

The items used in the final analyses were informed by pre-existing research. Five sociodemographic questions and the measure of smoking status were derived from Torabi and Seo (2004). The measure of attitudes was derived from the literature (Jones, Love, Thomson, Green, & Howden-Chapman, 2001) and slightly modified. The other questions were developed by adapting constructs from health behavior theories (Janz & Becker, 1984; Madden et al., 1992). The survey instrument was reviewed by a panel of health behavior theory experts (n = 5) prior to administration to promote face validity of the health behavior items.

The method with which we collected data at the fair precluded us from assessing the survey's test-retest reliability among those who provided data. Thus, the researchers approached 10 residents of Lawrence County using a single contact point (snowball sampling) to complete the survey once, and then again in two weeks. Correlation analyses were used to determine the extent to which the instrument may be reliable over time. Pearson correlation values (repeated measures) ranged from .655 to 1.00, with most scores falling between .900 and 1.00.

3. Characteristics of the Sample

Of 470 individuals approached to complete the survey, a total of 359 individuals completed a survey form, producing 355 useable surveys (76.4% response rate). Of these individuals, 41.5% had not completed high school/GED *or* had received a high school diploma or GED, 29.9% had completed some college, and 28.5% had completed college or more. Additionally, 68.1% were working for pay at the time of survey administration, 89.3% were white, 27.9% were current smokers (smoking at least 1 cigarette per day for the past 30 days), and 26.7% were not married or living with a partner. Detailed characteristics of the sample are included in Tables 1 and 2.

<Table 1> Characteristics of the sample

(N=359)

Characteristic	Number of respondents	Percentage (%)
Race	**355**	
White	317	89.3
Non-White	38	10.7
Partner's Education	**352**	
Not applicable	94	26.7
Less than high school/high school	105	29.8
Some college	70	19.9
College or higher	83	23.6
Education	**354**	
Less than high school/high school	147	41.5
Some college	106	29.9
College or higher	101	28.5
Smoking Status	**355**	
Current smoker1	99	27.9

Characteristic	Number of respondents	Percentage (%)
Not a current smoker	256	72.1
Employment	**354**	
Working for pay	241	68.1
Not working for pay	113	31.9
Susceptibility[2]	**354**	
Unlikely to be exposed	57	16.1
Neutral	68	19.2
Likely to be exposed	229	64.7
Severity[3]	**354**	
Does not harm those exposed	32	9.0
Neutral	83	23.4
Harms those exposed	239	67.5
Responsibility[4]	**354**	
Not responsible	56	15.8
Neutral	90	25.4
Responsible	208	58.8

1 Defined as having smoked at least 1 cigarette per day for the past 30 day
2 "Do you think that the average person is likely or unlikely to be exposed to secondhand smoke in enclosed public places?"
3 "Secondhand smoke is a mixture of exhaled smoke and other gasses and particles. Do you feel that secondhand smoke…"
4 "To what extent do you believe that smokers are responsible for any effects their secondhand smoke might have on others in enclosed places?"

<Table 2> Attitudes[1] toward smoke-free air policies

(N=359)

Policy Location/Attitude	Number of respondents	Percentage (%)
Bars/Restaurants	**346**	
Oppose	89	25.7
Neutral	92	26.6
Support	165	47.7
Workplaces	**346**	
Oppose	70	20.2
Neutral	82	23.7
Support	194	56.1
All Public Places	**348**	
Oppose	85	24.4
Neutral	89	25.6
Support	174	50.0
Vehicles When Minors Are Present	**344**	
Oppose	82	23.8
Neutral	73	21.2
Support	189	54.9

1 "A smoke-free air policy is one that prohibits smoking in enclosed places. To what extent do you oppose or support a smoke-free policy in the following enclosed places…"

4. Data Analysis

We used SPSS v.17 to articulate four separate multinomial regression models to calculate adjusted odds ratios for each of four settings, respectively: bars/restaurants, workplaces, all public places, and motor vehicles when minors are present. In each of these models, the outcome variable was the *attitude about an SFAP* targeting a given setting (see Table 2 for the outcome variables and Table 3 for the results of each model). The remaining eight variables (see Table 1) functioned as predictor variables. The mean sample size for the regression models after accounting for missing data was 341. The survey used to collect data for this study included additional response options for the predictor and outcome beyond those seen in Tables 1 and 2 and used in the analyses. However, because of the relatively small sample size and the number of predictor variables, the inclusion of these additional response options generated over-specified models. We consequently recoded our variables as follows:

Each of the four outcome variables that measured attitudes about SFAPs for each setting was recoded from a 5-point scale (1 - Completely oppose, 2 - Oppose, 3 - Neutral, 4 - Support, 5 - Completely support) to a 3-point scale (1 - Oppose, 2 - Neutral, and 3 - Support). Each of the three measures of beliefs about the health of others (susceptibility, severity, and responsibility) likewise was recoded from a 5-point scale to a 3-point scale (merging responses of “1” and 2” together and responses of “4” and “5” together). Finally, smoking status, race, and employment status were dichotomized in such a way that the response option with the majority of respondents was a “1” and all other responses were a “0.”

We initially collected data on several other variables that we did not include in our final analyses: age, political affiliation, and gender. Among these variables, “age” and “political affiliation” represented the highest number of individual missing cases: 27 and 16, respectively. We ran full analyses *including* these three variables and found that they were uniformly non-significant predictors and that they lent to the over-specification of the model. We therefore excluded them from our final analyses.

In order to determine the extent to which the predictor variables exhibited multicollinearity, we ran Pearson correlation analyses prior to running the regression models themselves. No issues with the data were observed. Goodness of fit tests on each model suggested that the models appropriately matched the data. Finally, because the extant literature does not assess characteristics of neutral attitudes about SFAPs, this manuscript does not report or discuss results pursuant to these attitudes, focusing instead on oppositional attitudes.

Ⅲ. Results

Table 3 depicts adjusted odds ratios (AOR), 95% confidence intervals, and significance levels for significant predictor variables in each of the 4 setting models in terms of “opposition to” SFAPs (with “support for” as the outcome reference category). Because we particularly were interested in characteristics of those who oppose SFAPs, support for SFAPs was set as the reference category. In Table 3, reference categories for each predictor variable are listed last and highlighted in gray. We reported adjusted odds ratios because this study was designed to examine the underlying factors in the proposed model that work to explain variation in attitudes about SFAPs. The sample was not weighted prior to analysis because there is no reliable way to determine the population from which the attendees of the county fair were drawn.

Of the 8 predictor variables used in the final regression analyses (see Table 1), 5 were predictive of opposition to SFAPs in at least one setting (see Table 3). Respondents reporting an education level equivalent to high school or less were more likely than respondents who completed college or more to oppose SFAPs in workplaces (AOR = 4.17, p = .003) and in all public places (AOR = 2.65, p = .048). Individuals characterized as current smokers were more likely than others to oppose SFAPs in workplaces (AOR = 3.60, p = .002). Respondents who indicated that individuals are unlikely to be exposed to SHS were more likely than respondents who believed that individuals are susceptible to exposure to SHS to

<Table 3> Adjusted odds of reporting opposition (versus support) to an SFAP targeting the given location.

	Significant Predictors of Attitudes toward SFAPs in Bars and Restaurants			Significant Predictors of Attitudes toward SFAPs in Workplaces			Significant Predictors of Attitudes toward SFAPs in All Public Places			Significant Predictors of Attitudes toward SFAPs in Vehicles when Minors are Present		
	AOR	**95% CI**	***p***	**AOR**	**95% CI**	***p***	**AOR**	**95% CI**	***p***	**AOR**	**95% CI**	***p***
Education												
High school/GED or less	-	-	-	4.17**	1.60-10.82	.003	2.65*	1.00-6.99	.048	-	-	-
Some college	-	-	-	1.37	0.51-3.66	.535	1.41	0.54-3.72	.487	-	-	-
College or higher[r]												
Smoking Status												
Smoker	-	-	-	3.60**	1.61-8.08	.002	-	-	-	-	-	-
Non-smoker[r]												
Susceptibility												
Unlikely to be exposed	2.48	0.93-6.66	.070	3.54*	1.32-9.50	.012	-	-	-	-	-	-
Neutral	2.88*	1.11-8.14	.047	1.67	0.61-4.55	.320	-	-	-	-	-	-
Likely to be exposed[r]												
Severity												
Does not harm those exposed	4.48*	1.13-17.75	.033	-	-	-	6.39*	1.38-29.67	.018	-	-	-
Neutral	4.18**	1.50-11.64	.006	-	-	-	3.81**	1.39-10.44	.009	-	-	-
Harms those exposed[r]												
Responsibility												
Not responsible	4.53**	1.52-13.53	.007	-	-	-	6.07***	2.01-18.33	.001	3.19*	1.14-8.91	.027
Neutral	2.82*	1.06-7.50	.037	-	-	-	5.02***	1.95-12.94	.001	1.52	0.62-3.73	.365
Responsible[r]												

Statistical significance is noted as follows: (* p<.05; **p<.01; *** p<.001). Only data for statistically significant variables are shown.
[r] stands for “reference category”; SFAP stands for smoke-free air policies; AOR stands for adjusted odds ratio; CI stands for confidence interval.

oppose SFAPs in workplaces (AOR = 3.54, p = .012), and respondents who reported ambivalence about the likelihood of exposure of others to SHS were more likely than respondents who believed that individuals are susceptible to exposure to SHS to oppose SFAPs in bars and restaurants (AOR = 2.88, p = .047). Those who indicated that SHS does not harm those exposed to it or who expressed ambivalence about the harm caused by SHS to those exposed were more likely than respondents who indicated that SHS harms those exposed to it to oppose SFAPs in bars and restaurants (AOR = 4.48, p = .033; AOR = 4.18, p = .006) and all public places (AOR = 6.39, p = .018; AOR = 3.81, p = .009). Finally, those who indicated that smokers were not responsible for the effects of their SHS on others and respondents who reported ambivalence about smokers' responsibility for the effects of their SHS on others were more likely than respondents who indicated that smokers are responsible for the effects of their SHS on others to oppose SFAPs in bars and restaurants (AOR = 4.53, p = .007; AOR = 2.82, p = .037), all public places (AOR = 6.07, p < .001; AOR = 5.02, p < .001), and in motor vehicles when minors are present (AOR = 3.19, p = .027, "not responsible" only).

Ⅳ. Discussion

Results of the exploratory analyses presented in this paper suggest that *beliefs about the health of others* are predictive of *attitudes about SFAPs* in each of 4 settings. Out of 4 possible predictions for each variable ("oppose" versus "support" in each of 4 different settings), low to neutral "perceived responsibility of smokers for the effects of their SHS on the health of others" predicted 3 non-supportive positions, low to neutral "perceived severity of the effects of SHS on others" predicted 2 non-supportive positions, and low to neutral "perceived susceptibility of the effects of SHS on others" predicted 2 non-supportive positions. Understanding the beliefs that are associated with oppositional attitudes about SFAPs, especially policies targeting areas that might be considered more "private," such as personal vehicles, will be important in overcoming anticipated resistance to these policies (Hyland et al., 2012). This understanding may especially be key given the prospective expansion of SFAPs to cover additional populations in the United States (Cummings & Orleans, 2009).

Two other variables (education and smoking status) predicted 3 non-supportive positions in aggregate. Previous literature similarly finds education and smoking status to be correlated with attitudes about SFAPs (Torabi & Seo, 2004; Mei et al., 2009). It may seem unusual that smoking status does not predict attitudes about SFAPs in all settings (it does so only for workplaces), especially given that it is a "major" predictor in previous research addressing attitudes about SFAPs (Blake, Viswanath, Blendon, & Vallone, 2010). However, the values reported in this paper are adjusted odds ratios, which account for the entire model. The *unadjusted* odds ratios for smoking status (which account only for the smoking status predictor variable and are not reported in this study) are significant across all four settings. This reinforces the notion that beliefs about the health of others merit further research.

Interestingly, the significant predictor variables were not uniform between the regression models. For instance, although there were 3 significant predictor variables for attitudes about SFAPs in bars and restaurants and for attitudes about SFAPs in workplaces, only 1 significant predictor variable was shared between both models. This suggests that there may be fundamental differences between individuals' attitudes about SFAPs in different settings. For example, bars and restaurants, especially drinking establishments, may be seen as "bastions of smoking" (Mons et al., 2012, p. 15) where one should expect SHS exposure. This perception might influence belief structures, including the responsibility of smokers for the effects of their SHS on others – some individuals might, for example, hold that those who visit such an establishment tacitly agree to SHS exposure, affecting the extent to which smokers are responsible for SHS in that venue. Further, variables not measured in this study, such as anticipated economic impact (especially in the case of bars and restaurants), might also affect beliefs and attitudes, either positively or negatively (Craven & Marlow, 2008; Eriksen & Chaloupka, 2007). There is little research in

the current SHS and SFAP literature that explicitly addresses differences in individuals' attitudes about SFAPs implemented in different locations; the results reported in this manuscript suggest that such research should be pursued in the future.

The findings reported in this paper are limited by the sampling methodology (both in terms of size and collection methodology). The results of this study only can be generalized to the attendees of the 2009 Lawrence County Fair who completed this survey. It is possible that confounding variables, not measured with this survey instrument, affected the findings reported herein. Further, the theory-based questions used in our survey have not been tested extensively for validity. Importantly, however, this is an exploratory first step toward understanding the extent to which sociodemographic variables, smoking status, and beliefs about the health of others might predict attitudes about and intentions related to SFAPs, and potentially other policies that might improve health. These findings suggest that constructs from "traditional" health behavior theories can be modified to examine beliefs about the health of others, and that these beliefs, in turn, effectively can predict attitudes about SFAPs. Further studies based on these principles are warranted, including research conducted among larger, randomized samples. If these findings are replicated, it may be the case that efforts to alter *beliefs about the health of others* might effectively sway population attitudes about SFAPs. For example, a mass media campaign might include information suggesting that smokers are responsible for the effects of their SHS on others who involuntarily are exposed.

Ⅴ. Conclusion

It is important for both health officials and others to understand the root causes of community opposition to or support for such policies because these are the voices that determine policy passage and implementation. If health officials and others understand the theoretical belief structures and other factors that predict attitudes about SFAPs, they more effectively might tailor their actions to increase population support, and decrease population opposition, to a given SFAP. In addition, if similarly significant findings were to result from future research, it would support not only the practical application of these findings as described above but also the more generalized proposal that health behavior theorists can use beliefs about the health of others to predict attitudes about policy.

References

American Nonsmokers' Rights Foundation [ANRF]. (2012). Summary of 100% smokefree state laws and population protected by 100% U.S. smokefree laws. Retrieved from http://www.no-smoke.org/pdf/SummaryUSPopList.pdf

Bélanger, M., O'Loughlin, J., Okoli, C. T. C., McGrath, J. J., Setia, M., Guyon, L., . . . Gervais, A. (2008). Nicotine dependence symptoms among young never-smokers exposed to secondhand tobacco smoke. *Addictive Behaviors, 33*, 1557-1563.

Blake, K. D., Viswanath, K., Blendon, R. J., & Vallone, D. (2010). The role of tobacco-specific media exposure, knowledge, and smoking status on selected attitudes toward tobacco control. *Nicotine and Tobacco Research, 12*, 117-126.

Block, M., Haverkos, L., & Jobe, J. B. (2007). Tobacco use and secondhand smoke exposure of children and youth with serious chronic illness: Establishing an agenda for research and action [Editorial]. *Journal of Pediatric Psychology [EPub]*, 1-2.

Brennan, P., Buffler, P.A., Reynolds, P., Wu, A.H., Wichmann, E., Agudo, A., . . .Boffetta, P. (2004). Secondhand smoke exposure in adulthood and risk of lung cancer among never smokers: A pooled analysis of two large studies. *International Journal of Cancer, 109*, 125-131.

Centers for Disease Control and Prevention [CDC]. (2009). Tobacco-related mortality. Retrieved from http://www.cdc.gov/tobacco/data_statistics/fact_sheets/health_effects/tobacco_related_mortality/index.htm

Cesaroni, G., Forastiere, F., Agabiti, N., Valente, P., Zuccaro, P., & Perucci, C.A. (2008). Effect of the Italian smoking ban on population rates of acute coronary events. *Circulation, 117*, 1183-1188.

Collins, J. L., Koplan, J. P., & Marks, J. S. (2009). Chronic disease prevention and control: Coming of age at the Centers for Disease Control and Prevention. *Preventing Chronic Disease, 6*, A81.

Craven, B. & Marlow, M. L. (2008). Economic effects of smoking bans on restaurants and pubs. *Economic Affairs, 28*(4), 57-61.

Cummings, L. (2009). Bans on smoking in vehicles carrying children. Retrieved from http://www.cga.ct.gov/olr

Cummings, K. M. & Orleans, C. T. (2009). Policies to achieve a smoke-free society: A research agenda for 2010-2015. Robert Wood Johnson Foundation.

Davis, K. C., Nonnemaker, J. M., & Farrelly, M. C. (2007). Association between national smoking prevention campaigns and perceived smoking prevalence among youth in the United States. *Journal of Adolescent Health, 41*, 430-436.

Dove, M. S., Dockery, D. W., & Connolly, G. N. (2010). Smoke-free air laws and secondhand smoke exposure among nonsmoking youth. *Pediatrics, 126*, 80-87.

Eagan, T. M. L., Hetland, J., & AarØ, L. E. (2006). Decline in respiratory symptoms in service workers five months after a public smoking ban. *Tobacco Control, 15*, 242-246.

Eisner, M. D., Klein, J., Hammond, S. K., Koren, G., Lactao, G., & Iribarren, C. (2005). Directly measured second hand smoke exposure and asthma health outcomes. *Thorax, 60*, 814-821.

Erkisen, M. & Chaloupka, F. (2007). The economic impact of clean indoor air laws. *CA: A Cancer Journal for Clinicians*, *57*, 367-378.

Fichtenberg, C. M. & Glantz, S.A. (2002). Effect of smoke-free workplaces on smoking behavior: systematic review. *British Medical Journal, 325*, 188-195.

Fong, G.T., Hyland, A., Borland, R., Hammond, D., Hastings, G., McNeill, A., . . . Driezen, P. (2006). Reductions in tobacco smoke pollution and increases in support for smoke-free public places following the implementation of comprehensive smoke-free workplace legislation in the Republic of Ireland: Findings from the ITC Ireland/UK Survey. *Tobacco Control, 15*, iii51-iii58.

Frieden, T. R. (2010). A framework for public health action: The Health Impact Pyramid. *American Journal of Public Health, 100*, 590-595.

Goodman, P., Agnew, M., McCaffrey, M., Paul, G., & Clancy, L. (2007). Effects of the Irish smoking ban on respiratory health of bar workers and air quality in Dublin pubs. *American Journal of Respiratory and Critical Care Medicine, 175*, 840-845.

He, J., Vupputuri, S., Allen, K., Prerost, M. R., Hughes, J., & Whelton, P. K. (1999). Passive smoking and the risk of coronary heart disease – A meta-analysis of epidemiologic studies. *The New England Journal of Medicine, 340*, 920-926.

House Enrolled Act No. 1149 (2012). Retrieved September 10, 2012, from http://www.in.gov/legislative/bills/2012/HE/HE1149.1.html

Hyland, A., Barnoya, J., & Corral, J. (2012). Smoke-free air policies: Past, present and future. *Tobacco Control, 21*, 154-161.

Janz, N. K. & Becker, M. H. (1984). The health belief model: A decade later. *Health Education & Behavior, 11*, 1-47.

Johnson, K. (2005). Accumulating evidence on passive and active smoking and breast cancer risk. *International Journal of Cancer, 117*, 619-628.

Jones, M., Navas-Acien, A., Yuan, J., Wipfli, H., Samet, J., & Breysse, P. N. (2008). Secondhand tobacco smoke exposure in motor vehicles. *Epidemiology, 19*, S346.

Jones, S., Love, C., Thomson, G., Green, R., & Howden-Chapman, P. (2001). Second-hand smoke at work: The exposure, perceptions and attitudes of bar and restaurant workers to environmental tobacco smoke. *Australian and New Zealand Journal of Public Health, 25*, 90-93.

Kalantar, J. S. & Talley, N. J. (1999). The effects of lottery incentive and length of questionnaire on health survey response rates: A randomized study. *Journal of Clinical Epidemiology, 52*, 1117-1122.

Kasl, S. V., & Cobb, S. (1966). Health behavior, illness behavior, and sick-role behavior. *Archives of Environmental Health, 12*, 246 – 266; 531 – 541.

Levy, D. T. & Friend, K. (2001). A framework for evaluating and improving clean indoor air laws. *Journal of Public Health Management and Practice, 7*, 87-96.

Loewenberg, S. (2006). Spaniards skeptical of new smoking ban. (Editorial) *The Lancet, 367*, 464.

Madden, T. J., Ellen, P. S., & Ajzen, I. (1992). A comparison of the Theory of Planned Behavior and the Theory of Reasoned Action. *Personality and Social Psychology Bulletin, 18*, 3-9.

Mei, C.J., Ma, S.J., Xu, X.F., Wang, J.F., Wang, C.P., Chen, A.P., et al. (2009). Factors associated with attitudes toward tobacco control policy in public places among adults in three counties of China. *Zhonghua Liu Xing Bing Xue Za Shi, 30*, 549-553.

Menzies, D., Nair, A., Williamson, P. A., Schembri, S., Al-Khairalla, M. Z. H., Barnes, M., . . . Lipworth, B.J. (2006). Respiratory symptoms, pulmonary function, and markers of inflammation among bar workers before and after a legislative ban on smoking in public places. *Journal of the American Medical Association, 296*, 1742-1748.

Mons, U., Nagelhout, G. E., Guignard, R., McNeill, A., Putte, B. V. D., Willemsen, M. C., . . . Breitling, L. P. (2012). Comprehensive smoke-free policies attract more support from smokers in Europe than partial policies. *European Journal of Public Health, 22*, 10-16.

Mulcahy, M., Evans, D. S., Hammond, S. K., Repace, J. L., & Byrne, M. (2005). Secondhand smoke exposure and risk following Irish smoking ban: An assessment of salivary cotinine concentrations in hotel workers and air nicotine levels in bars. *Tobacco Control, 14*, 384-388.

Sendzik, T., Fong, G. T., Travers, M. J., & Hyland, A. (2009). An experimental investigation of tobacco smoke pollution in cars. *Nicotine and Tobacco Research, 11*, 627-634.

Seo, D-C. (2005). Correlates of attitudes toward a smoking ban in vehicles. *Journal of Public Health Management and Practice,*

11, 346-350.

Song, A. V., Morrell, H. E. R., Cornell, J. L., Ramos, M. E., Biehl, M., Kropp, R. Y., . . . Halpern-Felsher, B.L. (2009). Perceptions of smoking-related risks and benefits as predictors of adolescent smoking initiation. *American Journal of Public Health, 99*, 487-492.

Thomson, G. & Wilson, N. (2009). Public attitudes to laws for smoke-free private vehicles: A brief review. *Tobacco Control, 18*, 256-261.

Torabi, M. R. & Seo, D-C. (2004). Sociodemographic correlates of public perceptions regarding a smoking ban in bars and restaurants. *Journal of Drug Education, 34*, 335-350.

World Health Organization [WHO] (2008). *Closing the gap in a generation: Health equity through action on the social determinants of health. Final Report of the Commission on Social Determinants of Health.* Geneva, Switzerland: Author.

Zhu, B., Heeschen, C., Sievers, R. E., Karliner, J. S., Parmley, W. M., Glantz, S. A., . . .Cooke, J.P. (2003). Second hand smoke stimulates tumor angiogenesis and growth. *Cancer Cell, 4*, 191-196.