

4-29-2014

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Michael J. Roszkowski

Lane Beth Neubauer

Nataliya Zelikovsky

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Recommended Citation

Roszkowski, M. J., Neubauer, L. B., & Zelikovsky, N. (2014). Perceived Benefits of a Designated Smoking Area Policy on a College Campus: Views of Smokers and Non-smokers. *The New York Journal of Student Affairs*, 14(1). Retrieved from <https://commons.library.stonybrook.edu/nyjsa/vol14/iss1/3>

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New York Journal of Student Affairs
Article

Volume 14, Issue 1, 2014

Perceived Benefits of a Designated Smoking Area Policy on a College Campus: Views of Smokers and Non-smokers

Michael J. Roszkowski, PhD
Assistant Provost for Evaluation Services & Institutional Research
La Salle University

Lane Beth Neubauer Ph.D.
Associate Dean of Students, Division of Student Affairs
La Salle University

Nataliya Zelikovsky, PhD
Associate Professor, Psychology
La Salle University

Designated smoking areas are meant to: (1) limit secondhand smoke exposure to non-smokers, and (2) reduce cigarettes consumption by smokers. One year after the implementation of a designated smoking area protocol on a college campus, students were intercepted and asked to complete a short Likert survey designed to assess its perceived benefits. Analysis of the data showed that both smokers and non-smokers consider a reduction in the number of cigarettes consumed by smokers to be an unlikely outcome, which is consistent with research conducted in a variety of setting showing that designated smoking areas typically do not lead to less smoking by smokers. However, whereas the non-smokers agreed that the policy resulted in lowering exposure to second-hand smoke, smokers were unwilling to endorse a statement indicating that this occurred. This suggests that it may be unrealistic to assume that appeals to empathy (i.e. pointing out the negative impact of second hand smoke) when promoting the benefits of a designated smoking area will result in an automatic buy-in.

Keywords: cigarettes, designated smoking areas, empathy, second-hand smoke

Periodic surveys conducted by Johnston, O'Malley, Bachman, and Schulenberg (2012) indicate that the prevalence of smoking among college students is declining and that it is lower than among same-aged peers who are not attending college (26% vs. 43%). Smoking nonetheless remains a major health issue facing student affairs administrators at institutions of higher learning (Lee, Goldstein, Klein, Ranney, & Carver, 2012), especially the hazards of second hand smoke (Wolfson, McCoy, & Sutfin, 2009).

The regulation of tobacco use on college campuses has been expanding since the 1990s (Halperin & Rigotti, 2003), but typically colleges have instituted designated smoking area policies rather than prohibiting smoking entirely anywhere on campus (American Nonsmokers' Rights Foundation, 2012; Fennel, 2012). Attempts to ban tobacco use entirely on campus are often met with student protest (see Genovese, 2012; Sorvino, 2012), and the enforcement of any type of anti-smoking policies continues to be an elusive issue (Fennell, 2012; Fallin et al., 2012).

Designated smoking areas are meant to (1) limit secondhand smoke exposure by non-smokers and (2) curtail the number of cigarettes consumed by smokers (Biener & Nyman, 1999). The preponderance of research in various settings indicates that although designated smoking areas do limit secondhand smoke exposure, reductions in cigarette consumption and quit rates are minimal. If reducing cigarette consumption is the aim, it is much more likely to occur under a more restrictive policy which mandates a totally smoke-free environment (Borders, Xu, Bacchi, Cohen, & SoRelle-Miner, 2005; Crow, 1984; Fichtenberg & Glantz, 2002).

Understandably, smokers generally tend to be less supportive of any type of regulation of smoking (e.g. Abdullah & Yam, 2005; Malam, Barnard, Mackey, & Roberts, 2005; McMillen, Winickoff, Klein, & Weitzman, 2003), particularly total bans, but sometimes the differences in attitudes between smokers and non-smokers are surprisingly small (e.g. Pilkington, Gray, Gilmore, & Daykin, 2006; Wilson, Duncan, & Nicholson, 2004). Among smokers, the strongest opposition to anti-smoking policies occurs among persons with the lowest level of education and income (Makkai, McAllister, & Goodin, 1994; Pederson, Bull, Ashley, & Kozma, 1992). Most disturbing is the finding that smokers tend to be either less aware of the risks of second-hand smoke or perhaps less willing to acknowledge such dangers (Lader & Goddard, 2005).

The present study examined attitudes toward a newly implemented designated smoking area protocol on a college campus. First, it was of interest to determine whether college students

perceived what the research literature shows, namely, that a designated smoking area policy is more likely to reduce second-hand smoke exposure than to decrease cigarette smoking. Second, we sought to find out whether there were differences between smokers and non-smokers in the extent to which they considered these benefits to have materialized as a result of the policy. Based on previous research, it was anticipated that smokers would be less likely to concede that either potential benefit occurred, but we did not know if the difference in opinion would be of the same magnitude across both benefits.

Method

Participants

In an effort to reduce smoking on campus, a protocol restricting smoking to designated smoking areas was gradually implemented over a period of one year on the campus of a private university located in an urban neighborhood in the mid-Atlantic region of the U.S. As they made their way around campus, students and employees at the university were intercepted by undergraduate volunteers and were asked to anonymously complete a questionnaire requesting feedback about this policy. The survey form was completed and handed back to the requestor during this encounter. Surveys were collected from 214 individuals (170 students, 8 faculty, 10 staff, and 26 undetermined), but only the data from students are used in this analysis because there was an insufficient number of staff and faculty. Furthermore, it was restricted to the 157 students who answered both questions that are the focus of this article. This final sample consisted of 106 females and 51 males, of whom 131 resided on campus. They were distributed as follows in terms of class standing: 54 freshman, 50 sophomore, 28 junior, 21 senior, and 4 graduate students. Sixteen were self identified smokers.

Materials

A short survey was developed to assess perceptions about the program, which included items dealing with beliefs about the benefits of the designated smoking area protocol. For the purpose of addressing the issue relevant to this report, answers to the following two items were considered:

- *Assigning designated smoking areas helps to decrease the number of cigarettes a person smokes daily.*
- *There has been a decrease in breathing second hand smoke on [university's name] main campus.*

Respondents indicated the extent of their agreement with each item on a five-point Likert scale where the answers were coded from 1 (strongly disagree) through 5 (strongly agree).

Results

Table 1 reports the distribution of answers and the mean agreement with the statements about the two benefits of designated smoking areas as a function of smoking status (smoker vs. non-smoker). Since the data consist of one independent variable (smoker vs. non-smoker) and two dependent variables (i.e. the two benefits of designated smoking areas), the SPSS GLM multivariate program was used to test for the significance of the observed differences.

Table 1

Level of Agreement with Each Benefit of a Designated Smoking Area Policy as a Function of Smoking Status

Benefit	Smoking Status	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	<i>M</i>	<i>SD</i>	Cohen's <i>d</i>
Cigarette Consumption Reduction	Non-Smoker	7.09%	26.24%	31.91%	26.95%	7.80%	3.02	1.07	0.31
	Smoker	6.25%	56.25%	0.00%	37.50%	0.00%	2.69	1.08	
Lower Secondhand Smoke Exposure	Non-Smoker	4.26%	9.93%	22.70%	38.30%	24.82%	3.70	1.08	0.91
	Smoker	6.25%	50.00%	12.50%	31.25%	0.00%	2.69	1.01	

An assumption of MANOVA is that there is homogeneity of variance-covariances matrices. The greater the disparity in group sizes, the smaller is the allowable departure from homogeneity. If group sizes are unequal and the homogeneity assumption is violated, then MANOVA may produce erroneous results. We therefore first tested for violations. The Box's *M* test checking for presence of a violation of the equality of covariance matrices was non-significant [Box's $M = 0.25$, evaluated at $F(3, 8297) = 0.08$, $p = .971$], thus failing to produce statistical evidence to suggest violation of the covariance occurred. Moreover, the Levene test of equality of error variance showed that the variances for smokers and non-smoker were not statistically different for either the ratings on decrease in cigarette consumption [$F(1,$

155) = 0.79, $p = .377$)] or ratings regarding a decrease in second hand smoke exposure [$F(1, 155) = 0.01, p = .915$].

Multivariate tests of differences between smokers and non-smokers (Pillai's Trace = .83, Wilks' Lambda = .17, Hotelling's Trace = 4.77, Roy's Largest Root = 4.77) were evaluated at $F(2, 154) = 6.32$ and were all determined to be statistically significant ($p = .002$, partial eta-squared = .08), which indicates the presence of significant differences between smokers and non-smokers on the composite of the two dependent variables. Tests of between-subjects effects (smoker vs. non-smoker) identified the significant differences to be between smokers' and non-smokers' views about the policy's effectiveness in limiting second-hand smoke exposure [$F(1, 155) = 12.61, p = .001$], but not in the reduction in number of cigarettes a smoker consumes [$F(1, 155) = 1.41, p = .237$]. The associated effect sizes in terms of Cohen's d for the between-subjects differences are shown in the last column of Table 1, namely .91 for decrease in second hand smoke exposure and .31 for decrease in cigarette smoking.

Discussion

A year after the implementation of a designated smoking area policy on campus, college students were asked to indicate their perceptions of the impact of this protocol on (1) reduction in exposure to second-hand smoke, and (2) decrease in cigarette consumption. In line with previous research conducted at other types of settings, college students who smoke consider such a policy as less effective than do non-smokers in terms of both potential benefits.

However, a smaller and statistically non-significant difference in opinion was observed between smokers and non-smokers about whether a decrease in cigarette consumption resulted from the policy, with members of both groups seeing a minimal impact. Conversely, with regards to limiting exposure to second-hand smoke, non-smokers felt that there was a much stronger outcome relative to the non-smokers. Somewhat surprisingly, smokers considered a limitation of second hand smoke exposure as no more probable than a reduction in cigarette consumption. In other words, whereas non-smokers differentiate between the two possible positive outcomes of restricting smoking to specific areas, smokers tend to see both in the same light.

Conclusion and Implications

This study explored the differences between smokers and non-smokers in the extent to which they endorsed the health benefits resulting from restricting smoking to designated areas on

a college campus. Smokers were less likely to acknowledge any positive impact of the new smoking regulations. Both the smokers and non-smokers did not believe that the policy led to less smoking by the smokers, and this is probably factual given that it is consistent with the literature about designated smoking areas (Borders et al., 2005; Crow, 1984; Fichtenberg & Glantz, 2002).

Given the dangers that smoking poses to other students (Wolfson, McCoy, & Sutfin, 2009), it was disturbing to learn that smokers were also unwilling to acknowledge that the policy led to the curtailment of exposure to second hand smoke (which most likely did occur), although this finding too is consistent with previous research in other milieus (Lader & Goddard, 2005). Intuitively, compliance with a designated smoking area policy because of the positive health benefits it has for others would appear to be a potential motivator for compliance with the smoking restrictions, but unfortunately smokers seem to deny the health risks their habit poses to nonsmokers. College administrators hoping to promote a designated smoking area on campus by merely pointing out the negative impact of second hand smoke on others may be disappointed in the results of their efforts.

Empathy is correlated with not smoking in public (Sari, Ramdhani & Eliza, 2008), but Konrath, O'Brien, and Hsing (2011) report that American college students are becoming less empathetic over time, particularly on scales measuring "perspective taking" and "empathic concern." Therefore, student affairs personnel trying to promote an anti-smoking policy on campus only on the basis of avoiding harm to others may find it to be a hard sell to the typical smoker. Perhaps smokers need to be encouraged to undergo empathy training in order to appreciate the risk that their behavior poses to others. Unfortunately, according to a recent review (Lam, Kolomitro, & Alamparambil, 2011), the evidence for the effectiveness of empathy training is far from solid.

Limitations

A comparison of the demographic characteristics of the sample and the student population at our university indicated that the sample and the population were similar in the proportion of women to men. Likewise, the sample and population were not dramatically different in terms of the class standing of the undergraduates. However, the percentage of smokers in our sample is about 10%, and this a lower figure than the 26% reported by Johnson et

al. (2012) for college students in general, which suggests that smokers were less likely to participate in the survey. The effect of this underrepresentation on results is unknown.

Some may see a limitation in the analysis of the survey results because the data analysis was carried out with parametric procedures. There is an ongoing debate about whether Likert scales meet the standards of an interval scale, and consequently, whether parametric analyses are appropriate. In this debate, we stand on the side that considers parametric procedures preferable (see Carifio & Perla, 2007), although we acknowledge the existence of the dispute.

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