Attitudes Toward Secondhand Smoke, Smoking, and Quitting Among Young People

Stanton A. Glantz, PhD*, and Patrick Jamieson, MS, EdD‡

ABSTRACT. Objective. To assess the impact of attitudes toward secondhand smoke among young people. Methods. Three hundred nonsmokers and 300 smokers (smoked a cigarette in last 30 days) 14 through 22 years of age in the United States were surveyed with random-digit dialing. The results of this cross-sectional survey were analyzed using logistic regression to determine predictors of nonsmoking and intent to stop among current smokers.

Results. Controlling for age, ethnicity, and education, nonsmokers were more likely to consider smoking risky than smokers (odds ratio [OR] = 3.46). Nonsmokers were twice as likely to consider secondhand smoke dangerous than smokers (OR = 1.47). Among the variables in our model, the only statistically significant predictor of planning to stop smoking or having actually stopped was believing that secondhand smoke harmed nonsmokers, which more than doubled the chances of planning to stop or having stopped smoking (relative risk = 2.17).

Conclusions. Educating young people about the dangers of secondhand smoke and empowering nonsmokers to speak out should be a strong element of any tobacco control program. Pediatrics 2000;106(6). URL: http://www.pediatrics.org/cgi/content/full/106/6/e82; tobacco, tobacco smoke pollution, passive smoking, environmental tobacco smoke, smoking cessation, smoking prevention.

ABBREVIATION. OR, odds ratio.

When public health professionals are designing tobacco control programs, efforts designed to prevent youth smoking or to encourage youth to stop smoking are often considered in competition with those designed to promote smoke-free environments. The fact that secondhand smoke increases the risk of death from lung cancer, heart disease, sudden infant death syndrome, and a variety of other diseases in nonsmokers1–4 has proven to be a powerful justification for creation of smoke-free workplaces, public places, and homes. Smoke-free workplaces5–13 and homes8,9,12,14 not only protect nonsmokers from secondhand smoke but also provide environments that facilitate smoking cessation among adults. Smoke-free workplaces reduce smoking prevalence by ~20% and lead to ~20% lower consumption among continuing smokers, which itself is associated with progress toward cessation.15 The tobacco industry has understood that concern about the health effects of secondhand smoke on nonsmokers undermines the social support network for smoking.16 One econometric study showed that presence of a local clean indoor air law was associated with lower teen smoking.6 To date, however, no one has examined whether concern over the effects of secondhand smoke on nonsmokers is a similarly powerful intervention for preventing smoking among youth or encouraging cessation among this group. We use a cross-sectional survey of youth and young adults (14 to 22 years of age) to suggest that interventions designed to educate these people about the dangers of secondhand smoke are also a powerful message with this group.

METHODS

After approval of the protocol by the institutional review board at the University of Pennsylvania, interviewers from Princeton Survey Research Associates used random-digit telephone dialing to contact 9301 households in the continental United States from May 27, 1999 through July 13, 1999. Within these households, 76% provided the needed screening information to identify a person 14 to 22 years of age. Approximately 15% of these cooperating households contained an eligible English-speaking respondent. In households with more than one eligible respondent, the person with the most recent birthday was selected for interviewing. Parental consent was obtained before interviewing respondents under 16 years of age. Respondents who reported smoking any cigarettes in the past 30 days were defined as smokers. The final sample contained 300 smokers and 300 nonsmokers with a total response rate of 51%.

The survey data were weighted to adjust for both sample design decisions (overrepresenting smokers) and for demographic nonresponse. This weighting was accomplished in 2 stages. In the first stage the relative proportions of smokers and nonsmokers were adjusted to correct for the fact that smokers were oversampled to increase their number in the final sample for analysis. The oversampling of smokers was accomplished by screening a large nationally representative sample of 14- to 22-year-olds on smoking status and then conducting the full interview on all smokers identified (n = 300) but only a portion of the nonsmokers. The weighting reflects the fact that smokers were oversampled 2.5 times relative to their prevalence in the large nationally representative sample of 14- to 22-year-olds screened on smoking status.

The second-stage weight involved bringing the sample of completed full interviews (after it had been adjusted to correct the smoker/nonsmoker proportions) into alignment with national parameters for sex by age, race, and region for Americans 14 through 22 years of age living in telephone households in the continental United States. These demographic weighting parameters were derived from a special analysis of the most recently available Census Bureau Annual Demographic File (from the March 1998 Current Population Survey). The weights are derived using an

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iterative technique that simultaneously balances the distributions of all weighting parameters.

In addition to age and gender, we included variables for ethnicity (Hispanic and black). We included an educational variable coded as 1 for respondents who were still enrolled in school or high school graduates and 0 if they had left school before completing high school. We assessed whether they considered smoking dangerous with this question: “In your opinion, is smoking very risky for a person’s health, somewhat risky, only a little risky, or not at all risky?” and coded the responses “somewhat risky” or “very risky” as 1 (yes) and “a little risky,” “not at all risky,” and “don’t know” as 0 (no). We assessed whether respondents considered secondhand smoke dangerous with this question: “True or false: each year thousands of nonsmokers die from breathing other people’s smoke” and coded “true” as 1 (yes) and “false,” “don’t know,” and “refused to answer” as 0 (no). We defined a current smoker as one who answered “yes” to this question: “During the past 30 days have you smoked any cigarettes?” We assessed whether a respondent had stopped smoking or planned to stop smoking with this question: “Do you plan to quit smoking?” coding “yes” or “already quit” as 1 (yes) and “no” or “don’t know” as 0 (no).

Data were analyzed with a single logistic regression including all the variables using SPSS, Version 9.0 (SPSS, Chicago, IL).

RESULTS

One half of the respondents were current smokers and one half were nonsmokers by design. (Of the 300 nonsmokers, 187 had never smoked a single cigarette.) Table 1 summarizes the demographic characteristics of the sample.

The odds of being a nonsmoker decreased with age (P = .001) and increased with black ethnicity (P = .010) and educational status (high school graduate or respondent still in high school; P = .003; Table 2). Nonsmokers were more likely to consider smoking risky than were smokers (odds ratio [OR] = 3.46; P = .002). Nonsmokers were more likely to consider secondhand smoke dangerous than were smokers (OR = 1.47; P = .050). Male gender and Hispanic ethnicity were not significantly related to smoking status.

Among the variables in our model, the only statistically significant predictor of planning to stop smoking or having actually stopped was believing that secondhand smoke harmed nonsmokers, which more than doubled the chances of planning to stop or having stopped smoking (OR = 2.19; P = .049; Table 3).

DISCUSSION

These results indicate that with teens and young adults, as with adults, concern with secondhand smoke is a powerful deterrent against smoking and a powerful motivator for smoking cessation.

In drawing these conclusions, it is important to remember that these results are from a cross-sectional study, so causality should be interpreted cautiously. As with any similar statistical analysis, the conclusions depend on the model tested.

Nevertheless, these findings are consistent with the results of longitudinal studies of similar questions in adults5,9,13 as well as econometric studies6 and focus-group studies of antitobacco advertising in teens,17 which indicate that secondhand smoke is 1 of 3 highly effective (along with antitobacco industry and addiction) messages for reaching teens. Tobacco control efforts directed at teens should have a strong element designed to educate people about the dangers of secondhand smoke and the rights of nonsmokers. Encouraging nonsmoking teens—as well as adults—to object to breathing secondhand smoke and encouraging creation of smoke-free homes is a productive tobacco control strategy for youth.

ACKNOWLEDGMENTS

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REFERENCES

3. US Environmental Protection Agency. Respiratory Health Effects of Pas-

### TABLE 1. Characteristics of Sample*

<table>
<thead>
<tr>
<th>Factor</th>
<th>All (%)</th>
<th>Nonsmokers (%)</th>
<th>Smokers (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (18 y or younger)**</td>
<td>54</td>
<td>45</td>
<td>75</td>
</tr>
<tr>
<td>Male gender</td>
<td>51</td>
<td>51</td>
<td>52</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>12</td>
<td>13</td>
<td>9</td>
</tr>
<tr>
<td>Black</td>
<td>15</td>
<td>17</td>
<td>9</td>
</tr>
<tr>
<td>Education (high school graduate or currently in school)**</td>
<td>92</td>
<td>94</td>
<td>28</td>
</tr>
<tr>
<td>Plan to quit</td>
<td>81</td>
<td></td>
<td>81</td>
</tr>
<tr>
<td>Smoking is risky**</td>
<td>94</td>
<td>97</td>
<td>88</td>
</tr>
<tr>
<td>Secondhand smoke harms</td>
<td>67</td>
<td>70</td>
<td>58</td>
</tr>
<tr>
<td>Nonsmokers**</td>
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</tr>
</tbody>
</table>

* Three hundred current nonsmokers and 300 smokers.

** P < .05 by x² analysis.

### TABLE 2. Predictors of Current Nonsmoking Status

<table>
<thead>
<tr>
<th>Factor</th>
<th>OR</th>
<th>95% Confidence Interval</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (y)</td>
<td>.79</td>
<td>.73 to .86</td>
<td>.001</td>
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<tr>
<td>Male gender</td>
<td>1.06</td>
<td>.73 to 1.55</td>
<td>.747</td>
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<tr>
<td>Hispanic</td>
<td>1.24</td>
<td>.67 to 2.29</td>
<td>.486</td>
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<tr>
<td>Black</td>
<td>2.24</td>
<td>1.22 to 4.14</td>
<td>.010</td>
</tr>
<tr>
<td>High school graduate or in school</td>
<td>2.68</td>
<td>1.39 to 5.16</td>
<td>.003</td>
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<tr>
<td>Smoking risky</td>
<td>3.46</td>
<td>1.60 to 7.47</td>
<td>.002</td>
</tr>
<tr>
<td>Secondhand smoke harms</td>
<td>1.47</td>
<td>1.00 to 2.17</td>
<td>.050</td>
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<tr>
<td>Nonsmokers</td>
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</table>

### TABLE 3. Plan to (or Already) Stopped Smoking

<table>
<thead>
<tr>
<th>Factor</th>
<th>OR</th>
<th>95% Confidence Interval</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (y)</td>
<td>.99</td>
<td>.82 to 1.18</td>
<td>.871</td>
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<tr>
<td>Male gender</td>
<td>1.07</td>
<td>.49 to 2.32</td>
<td>.867</td>
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<tr>
<td>Hispanic</td>
<td>.50</td>
<td>.15 to 1.63</td>
<td>.294</td>
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<tr>
<td>Black</td>
<td>.94</td>
<td>.25 to 3.50</td>
<td>.931</td>
</tr>
<tr>
<td>High school graduate or in school</td>
<td>.98</td>
<td>.30 to 3.18</td>
<td>.968</td>
</tr>
<tr>
<td>Smoking risky</td>
<td>2.19</td>
<td>.79 to 6.10</td>
<td>.132</td>
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<tr>
<td>Secondhand smoke harms</td>
<td>2.19</td>
<td>1.00 to 4.80</td>
<td>.049</td>
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<tr>
<td>Nonsmokers</td>
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