Perceptions about cigarette smoking and risks among college students

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The objective of the present study was to describe how college students perceive the risks of cigarette smoking and addiction to nicotine. Data came from a self-administered survey of 1,020 college students enrolled in two 4-year liberal arts colleges in the United States. The survey was conducted in the fall of 2001. Smokers and nonsmokers differed markedly in their perceptions about the health risks associated with short-term exposure to smoking. College students in this sample who smoked did not fully comprehend the risks associated with smoking. Smokers were half as likely as nonsmokers to believe that there are health risks from smoking only on weekends or a couple of days a week. Anti-tobacco messages for young adult smokers need to communicate more effectively the concept that each cigarette they smoke is doing them damage.

Introduction

Studies have found that adolescent and adult smokers do not fully appreciate the health consequences of smoking cigarettes (Slovic, 2001; Weinstein, 1999, 2001). Previous studies have highlighted varying degrees of risk awareness among adolescents or older adults (Slovic, 2001). The present study focused specifically on risk perceptions of smoking among college-aged students (18–24 years) after the Master Settlement Agreement. During 1993–2000, reductions in current smoking prevalence were reported for all age groups, except those aged 18–24 years (Centers for Disease Control and Prevention, 2002). Young adults continue to be an important target of tobacco industry marketing efforts (Cummings, Morley, & Hyland, 2002; Ling & Glantz, 2002; Sepe, & Glantz, 2002; Sepe, Ling, & Glantz, 2002). Anti-tobacco efforts directed at young adults would be more successful if public health educators had a better understanding of how this age group perceives the risks of smoking. This paper describes how college students perceive the risks of cigarette smoking and addiction.

Previous research has found that college students consider smoking less hazardous than the use of illegal drugs and regret starting to smoke (Jamieson & Romer, 2001; Luce & Merrell, 1995; Slovic, 2000b). Slovic (2000b) found that students from the University of Oregon who had smoked the longest were the most dissatisfied with their decision to smoke and reported the greatest difficulty in quitting smoking, and that, overall, 65% of daily smokers in this sample would not start smoking given the opportunity to go back in time. In another study conducted at a mid-sized private university in the southwest (Luce & Merrell, 1995), students were asked to estimate and prioritize the lethality and abuse potential of cocaine, heroin, marijuana, alcohol, and tobacco. Students overestimated deaths from cocaine, heroin, and marijuana and underestimated deaths from tobacco and alcohol. In addition, Jamieson and Romer (2001) found through the Annenberg study that 14–22 year olds vary in their sensitivity to risks associated with smoking mortality vs. other risk behaviors. For example, many students overestimated lung cancer risk but underestimated years of life lost and inaccurately perceived more deaths caused by gunshots, car accidents, alcohol, and other drug use than by smoking cigarettes.
Method

Participants

A total of 1,020 college students aged 18–24 years from a northern (Buffalo, NY) and a southern (Atlanta, GA) public 4-year arts and sciences college in a university system participated in the study. Both schools are primarily commuter schools (80%), with student enrollment between 11,400 and 13,400, and both have 15%–17% minority enrollment. This convenience sample represents students from 67 freshman English classes who voluntarily participated in answering a self-administered questionnaire in the fall of 2001 during morning, afternoon, and evening classes. All students were required to take freshman English. The participation rate was 97%, which includes the number of students who completed the survey. No students refused to take the survey. Eliminated from the study were college students under age 18 or over age 24, as referenced in institutional review board documents; those who could not stay to finish their surveys if the class ran over the allotted time; and high school students who were taking freshman English as an advanced placement class.

Survey instrument

The survey instrument included 11 questions about smoking status, perceptions of smoking, and respondent demographics. The questions came from the Centers for Disease Control Prevention (CDC) Youth Tobacco Survey (YTS) and Youth Risk Behavior Survey (YRBS). Students were asked about whether they had ever tried a cigarette, their smoking behavior in the previous 30 days, and their interest in quitting. Based on responses to questions about past-30-day smoking as used and defined in the YRBS, students were divided into three groups: nonsmokers, defined as those who had not smoked a cigarette in the past 30 days; occasional, or current, smokers, defined as those who had smoked cigarettes on 1–19 of the past 30 days; frequent smokers, defined as those who had smoked cigarettes on 20 or more days out of the past 30 days. The CDC uses the labels current smoker for those who have smoked cigarettes on one or more of the past 30 days, and current frequent smoker for those who have smoked cigarettes on 20 or more days out of the past 30 days. In the present study we are using the label occasional to reduce confusion between the terms current smoker and frequent smoker. The Texas Department of Health also has used this labeling in reporting results from its YTS.

Students’ beliefs about the risks of smoking and addiction were assessed by asking questions from the YRBS and the Florida Anti-Tobacco Media Evaluation. The questions chosen were used to assess the extent to which students perceive certain beliefs about smoking. In addition, we wanted to examine perceptions of risk associated with low levels of quantity and frequency of smoking. Students were asked to indicate definitely yes, probably yes, probably no, or definitely no for each of the following four questions: (a) “Do you think people risk harming themselves if they smoke 1–5 cigarettes every day?” (b) “Do you think people risk harming themselves if they only smoke on a weekend or a couple of days a week?” (c) “Can people get addicted to using tobacco just like they can get addicted to using cocaine or heroin?” and (d) “Do you think a person who smokes only on a weekend or at a party is a regular smoker?”

Analysis methods

Correlations were analyzed using responses to the question “During the past 30 days, on how many days did you smoke cigarettes?” with the risk perception questions. Odds ratios are from a logistic regression predicting a “definitely yes” response to statements about smoking while controlling for smoking status (non, occasional, frequent), gender, city, and class standing (freshman, sophomore, junior, senior). We examined mixed-model regression analyses to address the issue of potential clustering of responses within classrooms, and the variance estimates were virtually identical.

Results

Of the 1,020 study participants, two-fifths were male (40.2%) and three-fifths were female (59.8%). The mean age of the participants was 18.52 years, and the range of ages was 18–24 years. Some 80.6% participants identified their race as White or Anglo American, and almost 1 in 10 (8.7%) reported their race as Black or African American. Other participants reported their race as Hispanic/Latino (4%), Asian (3.1%), American Indian (0.6%), or Other (3%).

No statistically significant differences were found in group mean age and the distributions of race and gender. Using a mixed-model regression approach in which the classroom was treated as a random effect, we found the variance estimates to be no greater than 5% of the variance estimates assuming complete independence of observations for all models. In all cases, the statistical significance of each variable was the same in both models (independence across all observations, and accounting for clustering within schools and classrooms within city). We also examined mixed-model regression analyses to address the issue of potential clustering of responses within classrooms, and the variance estimates are within 5% of each other for all models and all variables (data not shown).
Some 71% of the participants had tried smoking cigarettes. One-third of respondents had smoked at least one cigarette during the past 30 days, 17% had smoked on 1–19 days, and 19% reported having smoked on at least 20 of the past 30 days. Among current smokers, almost 75% said they wanted to stop smoking, and 69% reported that they had tried to stop smoking in the past 12 months. Only 7% of current smokers believed they would be smoking 5 years from now.

Figure 1 shows that the majority of students, regardless of smoking status, agreed that people can get addicted to nicotine. However, smokers and nonsmokers differed in their perceptions about the risks of short-term smoking; correlations among the three categories of smoking status were significant with $p < .01$, with the exception of item 3 ($p = .11$). About 60% of nonsmokers believed that smoking on a weekend or a couple of days a week was harmful, whereas only about 32% of smokers endorsed this view. Nonsmokers also were more likely than smokers to believe that smoking one to five cigarettes per day was harmful.

A small minority of smokers viewed someone who smokes only on weekends and at parties as a regular smoker. Smokers were much less likely than nonsmokers to perceive someone who smokes only on weekends or at parties as a regular smoker.

**Discussion**

Our findings from the present study add to the literature base on risk perception among young adults, aged 18–24 years. These results are consistent with earlier studies showing that smokers tend to undervalue the health consequences associated with cigarette use relative to nonsmokers. However, in the present study the differences between smokers and nonsmokers were most apparent when asking about harm associated with short-term exposure to smoking. Arnett (2000) reported that 60% of young people and 48% of adults thought they could safely smoke for a few years and then quit. In trying to explain these differences, we used a logistic regression model to predict a “Definitely yes” response to statements about smoking, while controlling for smoking status (non, occasional, frequent), gender, city, and class standing. All differences are significant at $p < .001$, except question 3, $p > .11$.

Figure 1. Percent responding “definitely yes” to statements about smoking among nonsmokers, occasional smokers, and frequent smokers. Correlations were analyzed using responses to the question “During the past 30 days, on how many days did you smoke cigarettes?” (0 days, 1–2 days, 3–5 days, 6–9 days, 10–19 days, 20–29 days, or all 30 days). All differences were significant at $p < .01$, except question 3, $p = .11$. Odds ratios are from a logistic regression predicting a “Definitely yes” response to statements about smoking, while controlling for smoking status (non, occasional, frequent), gender, city, and class standing. All differences are significant at $p < .001$, except question 3, $p > .11$. 
results, Slovic (2000a) suggested that young people do not appreciate the concept that every cigarette they smoke is doing their body harm. Rather, smokers, especially younger smokers, tend to perceive health risks in a cumulative manner, which permits them to rationalize their current smoking behavior as falling below some threshold level of risk. Thus college students may not perceive much harm in smoking, especially because many express the view that they will be able to stop smoking at some future time. Risk perceptions may be influenced by beliefs about what constitutes a pattern of regular smoking. Among young adults it is especially common to observe infrequent bouts of smoking as someone begins to acquire a regular smoking pattern.

Findings from the present study can be used to help health educators tailor their communications about smoking to correct common misperceptions among young adult smokers. A basic tenet of communication theory is that messages will be more effective if they are made personally relevant to target audiences (Hill, Chapman, & Donovan, 1998). The traditional approach of educating smokers about the long-term health consequences of smoking may reinforce the perception that smoking is a risk that is not especially relevant to young adult smokers because the risks are seen as being far in the future. For young adult smokers, anti-tobacco messages need to communicate more effectively the concept that each cigarette smoked is doing them damage.

References