Youth Attitudes Towards Tobacco Control Laws: The Influence of Smoking Status and Grade in School

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ABSTRACT. This study examined adolescent attitudes towards tobacco control laws. An exploratory factor analysis, using surveys from over 9,000 students, identified the following three factors: (1) youth attitudes towards the efficacy of tobacco control laws, (2) youth attitudes towards tobacco possession laws and (3) youth attitudes towards tobacco sales laws. Findings revealed that smokers reported less favorable attitudes towards the efficacy of tobacco control laws, tobacco possession laws, and tobacco sales laws than non-smokers. In addition, youth in lower grade levels reported more support for the efficacy of tobacco control laws and tobacco possession laws than those in higher grades. Findings indicate that there are different dimensions of youth attitudes towards tobacco control laws, and that smoking status and grade in school have important relationships to these different factors. This understanding might better allow the perspectives of youth to be an additional consideration

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strongly supported the enforcement of laws prohibiting the sale of tobacco products to minors. The authors concluded that tobacco sales laws would be widely supported by adults, but other methods of tobacco control, such as increases in excise taxes on cigarettes, would not be supported.

There are only a few investigations that have assessed attitudes among youth towards these types of policies. Trinidad, Gilpin, and Pierce (2005) sought to examine factors associated with compliance and support for a smoke-free campus before and after a 1995 campus-wide smoking ban. They found that while non-smokers have overwhelmingly favored smoke-free school grounds both before and after the school ban, there was approximately a 3% increase in support among current smokers after enactment of the smoking ban. In another study, students in eight states were asked about their attitudes towards tobacco control laws (CDC, 1994). Investigators found that the majority of the students believed that tobacco use should be restricted to certain areas, and that tobacco access measures, such as general tobacco control laws, would be effective at reducing adolescent tobacco use. These results suggest that youth both support these laws and have positive opinions regarding their efficacy. In another study, Unger, Rohrbach, Howard, Cruz, Johnson, and Chen (1999) asked tenth graders about their support for anti-tobacco policies. Results indicated that support for anti-tobacco policies was highest among never-smokers and lowest among smokers. The level of support for anti-tobacco policies was similar among quitters and current smokers. Still, the researchers did not separately address tobacco sales laws, and tobacco possession laws and it is possible that youth opinions vary towards these different types of tobacco control policies.

Jason, Ji, Anes, and Birkhead (1991) examined the effects of both sales and possession laws on youth smoking behavior. They found a significant reduction in merchant sales of tobacco to youth and a reduction in youth tobacco use, but youth attitudes were not assessed. This case study was followed up with a more controlled investigation that assessed youth attitudes. Jason, Pokorny, and Schoeny (2003) randomly assigned communities to either a "sales enforcement only" C condition or a "sales and possession enforcement" E condition. Occasional and everyday cigarette use increased significantly less for youth in E than C communities. When asked if minors should be fined for possessing or using tobacco, among Caucasian youth (who represented a majority of the participants), the percentage of students who "disagreed" or "strongly disagreed" with these policies increased from the sixth to eighth grades (for E youth from 12% to 16%, and for C youth from 16% to 31%). Among current smokers in the E and C towns, over time, the

ex-smokers would have more favorable attitudes towards tobacco control laws than current or daily smokers, and that seventh and eighth graders would be more likely to endorse tobacco control laws than ninth and tenth graders.

METHODS

The present study is part of a larger project, the Youth Tobacco Access Project, which involved twenty-four towns in Illinois randomly assigned to a treatment or an enhanced treatment condition. In the twelve towns in the "treatment" condition, police officers agreed to enforce the tobacco sales laws. In the twelve towns in the "enhanced treatment" condition, police officers agreed to enforce both the tobacco sales laws and fine minors for the possession or use of tobacco. Thus, police in both conditions actively enforced tobacco sales laws, but only police in the enhanced treatment conditions enforced tobacco possession laws. The present study used baseline data collected from these towns.

Research Participants

This study included 9,097 students from 41 middle and high schools in northern and central Illinois. There were 4,629 females (50.9%), 4,321 males (47.9%) and 147 students chose not to include gender information. The sample included the following racial groups: American Indian/ Alaskan Native (.3%), Asian, Native Hawaiian/Other Pacific Islander (3.9%), Black or African American (6.7%), White (68.8%), Latino or Hispanic (12.2%) more than one race (5.8%). Nearly 14% of the sample racial composition was not known or not reported by the participant. Students' ages ranged from 9 to 17 years old. Of this student sample, nine participants were excluded from the current analysis because they were older than 17. As a result, data from the remaining 9,088 students were used for the analyses.

Procedures

All participants were required to return a consent form signed by their parent or guardian giving them permission to participate in the study. Consent forms were distributed at school registration, attached to report cards, and mailed home with a business reply envelope. The overall consent return rate was 68% (Ji, Jason, & Pokorny, 2004).

smoked 1 out of the past 30 days in the past 30 days, but did not smoke daily), and daily smokers (smoked 30 days in the past 30 days).

Grade. Students were asked to indicate their current grade in school while completing the survey.

RESULTS

Factor Analysis

The seven items on the survey involving youth attitudes and behaviors towards tobacco control laws were submitted to a principal-components factor analysis with varimax rotation. This procedure led to the retention of three factors, each comprising of 3, 2, and 2 items (with eigenvalues of 2.17, 1.25, and .87, respectively). While one factor had an eigenvalue below one, the three factor solution was the most conceptually interpretable, and it resulted in the most sound factor structure with stronger item loadings and factor internal consistency. The three factors accounted for 27.4%, 21.8%, and 19.9% of the total variance, respectively (69% of the total variance). The resultant factors were labeled (1) *youth attitudes towards the efficacy of tobacco control laws* (3 items), (2) *youth attitudes towards tobacco possession laws* (2 items) and (3) *youth attitudes towards tobacco sales laws* (2 items) (see Table 1). The first factor reflects

TABLE 1. Factor Loading, Means and Standard Deviations for Exploratory Factor Analysis

Subscale/Item Name	Factor 1 Loading	Factor 2 Loading	Factor 3 Loading	*M*	*SD*
Attitudes about the Efficacy of Tobacco Control Laws					
If sales law, then difficult to purchase	.69	−.02	.34	3.72	1.15
If sales, laws, then use less tobacco	.80	.14	.04	3.28	1.14
If possession law, then use less tobacco	.79	.17	−.04	2.83	1.17
Attitudes towards Tobacco Possession Laws					
Would give possession ticket	.02	.83	.13	3.65	1.02
Should give possession ticket	.31	.79	.17	3.95	1.26
Attitudes towards Tobacco Sales Laws					
Would give sales ticket	−.01	.10	.90	4.10	0.99
Should give sales ticket	.28	.41	.64	4.30	1.04

TABLE 2. Mean of Youth Attitudes Based on Smoking Status

Youth Attitudes	Group Means			
	Never	Prior	Current	Daily
Attitudes Towards Efficacy of Tobacco Control Laws	3.39^{bcd}	3.16^{acd}	2.76^{abd}	2.36^{abc}
Attitudes Towards Tobacco Possession Laws	4.01^{bcd}	3.52^{acd}	3.00^{abd}	2.45^{abc}
Attitudes Towards Tobacco Sales Laws	4.29^{bcd}	4.16^{acd}	3.77^{abd}	3.44^{abc}

^{a,b,c,d}Similar letters on means for each row of the three attitudes indicates that the means are significantly different at the .001 level.

towards tobacco possession laws and their attitudes towards tobacco sales laws than daily smokers.

There was also a significant main effect for youth grade in school on attitudes towards the efficacy of tobacco control laws, $F(3, 8762) = 8.00$, $p < .001$, and youth attitudes towards tobacco possession laws, $F(3, 8762) = 6.62$, $p < .001$ (see Table 3). Using Bonferroni's post hoc analyses, it was found that in contrast to younger students, older students had significantly less favorable attitudes towards the efficacy of tobacco control laws and possession tobacco laws. Seventh grade students had significantly more favorable attitudes towards the efficacy of tobacco control laws and tobacco possession when compared to students of eighth, ninth, and tenth grade. In contrast, tenth grade students viewed the efficacy of tobacco control laws and possession laws significantly least favorable when compared to students in all other grades. There were no significant differences in youth attitudes towards tobacco sales laws (students reported a high level of support for such laws, $M = 4.21$).

Certainly other individual level variables, such as gender and race, may influence youth attitudes towards tobacco control laws. While the current analyses focused on the specific influences of youth smoking status and grade in school, analyses were also conducted with race and gender as covariates. When race and gender were included within the full model as covariates, there were no changes in the findings that are reported above.

DISCUSSION

The present study found that youth attitudes towards tobacco control laws were composed of three factors measuring the efficacy of the

smoke than those who do not. These more direct negative consequences may be the reason that tobacco possession laws have less support among youth who smoke in the current sample.

Grade in school was also significantly related to youth attitudes towards tobacco control laws. Students in lower versus higher grades were more supportive of the efficacy of tobacco control laws and tobacco possession laws. Not only was there a decrease in support once youth reached higher grades, but there were also significant decreases in support with each progression of grade. These results support the notion that throughout adolescence, youth are likely to be less positive towards rules that they see imposed by adults or society (Smetana & Bitz, 1996). However, it is evident that the majority of youth, who are nonsmokers, do support these types of tobacco control laws.

One limitation in this study was the low reliability for the three factors measuring youth attitudes. Thorndike (1997) has indicated that reliabilities greater than .50 are adequate if samples are larger than 100. Because the current study had a large sample size, the somewhat low reliabilities appear adequate. Future studies might benefit by adding more items to assess youth attitudes towards these types of tobacco control. Another concern arises from factor three (youth attitudes towards tobacco sales laws), whose eigenvalue was less than one. The Kaiser-Guttman criterion (eigenvalue > 1.00) is the most frequently used criterion for retaining components in principal-components analysis. However, Floyd and Widaman (1995) suggest that this criterion is probably not optimal in some circumstances, as it can both overestimate and underestimate the number of factors to be retained. The third factor was retained based on factor interpretability rather than the Kaiser-Guttman criterion.

The present study provides evidence for the differentiation of adolescent attitudes towards tobacco control laws. Youth opinions regarding anti-tobacco policies are important for policy makers, and there is a need to better understand how youth feel about tobacco control laws. Documentation of youth support of tobacco control laws, namely tobacco sales laws and tobacco possession laws, may be influential in getting laws restricting smoking enacted. As noted by Ross and Chaloupka (2004), tobacco control policies may not affect the intensity of smoking by youth who are addicted to nicotine, but they may be effective in reducing smoking participation among youth. Thus, gauging youth support for tobacco control laws may be useful in preventing the initiation of youth smoking habits.

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