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Laws Reduce Youth Tobacco Use?**

*Leonard A. Jason, Steven B. Pokorny, Monica Adams,  
Yvonne Hunt, Praveena Gadiraju, and Michael Schoeny*

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## **DO FINES FOR VIOLATING POSSESSION- USE-PURCHASE LAWS REDUCE YOUTH TOBACCO USE?**

**LEONARD A. JASON**

*DePaul University, Illinois*

**STEVEN B. POKORNY**

*University of Florida*

**MONICA ADAMS**

*DePaul University, Illinois*

**YVONNE HUNT**

*Johns Hopkins University, Maryland*

**PRAVEENA GADIRAJU**

*Northern Illinois University*

**MICHAEL SCHOENY**

*University of Illinois at Chicago*

### **ABSTRACT**

The present brief report followed children exposed to consequences for violating Purchase, Use, and Possession (PUP) laws over time to assess changes in their smoking status. Youth in 24 towns were surveyed once a year for 3 years, and rates of tobacco use for those fined for PUP law violations were assessed. Of those who were given a ticket for a PUP law violation, 35 (39%) reported not smoking during year 1. Students in grade 7 were more likely to have quit smoking (84%) than those in grade 8 (35%), grade 9 (32%), or grade 10 (21%). For the two follow-up years, 45% and 41% reported not smoking. Assuming those who attrited were smokers, it is possible that about 15% to 24% of the original sample of children cited actually quit smoking over the follow-up period. The implications of these findings are discussed.

### **INTRODUCTION**

Each day, thousands of children are caught for violation of tobacco purchase, use, and possession (PUP) laws. The act of being caught and sanctioned could

influence tobacco use. Unfortunately, little is known about the impact of consequences for those who violate PUP laws. One community in Woodridge, Illinois saw smoking rates among 7th- and 8th-graders decrease considerably after two years of enforcement of tobacco sales laws using compliance checks (i.e., random unannounced inspections of tobacco retailers) along with fining minors for tobacco possession (Jason, Ji, Anes, & Birkhead, 1991). Seven-year follow-up data confirmed these reductions (Jason, Katz, Vavra, Schnopp-Wyatt, & Talbot, 1999). In a subsequent eight-town randomized study, White youth who lived in communities with strict enforcement of tobacco sales and possession laws had significantly less increases in tobacco use than those living in communities with only moderate enforcement of tobacco sales laws (Jason, Pokorny, & Schoeny, 2003). In addition, overall youth attitudes toward possession laws (i.e., the belief that minors should be fined for possessing and using tobacco) were actually favorable and more positive in towns that actively enforced these laws.

Several other studies from school-based samples (Giovino et al., 2001; Livingood, Woodhouse, Jopling Sayre, & Wludka, 2001) have suggested that PUP laws may have a deterrence effect and reduce the prevalence of youth smoking. Lazovich et al. (2001) tracked adolescents who had been cited for a first or second tobacco PUP law violation. Youth were interviewed at a three month follow-up, and 20.7% of those fined reported no smoking in the past month versus 8.1% of those who attended the diversion class (DeAnn Lazovich, Personal Communication, August 29, 2005). Alan, Langer, Perez McDonald, Warheit, and Williams (1999) and Langer and Warheit (2000) also tracked youth cited for PUP law violations who appeared in a special tobacco court and then watched a video on the health effects of smoking. At their court appearance, 16% of the youth reported not using tobacco since being cited, and an additional 28% reported using less tobacco. Two months later, follow-up of 210 of the 420 youth indicated that 28% claimed not to have used tobacco since being cited and an additional 29% said they used less.

The present study followed minors who were exposed to fines for violating PUP laws over time to assess changes in smoking status. Given the limited number of studies that have investigated this topic, the present brief report contributes needed information about the effects of PUP law violations on youth.

## METHOD

The present study is part of a larger longitudinal project examining ecological contexts of youth smoking, which involved 24 towns in Illinois. The study used data collected from these towns in the spring of 2001, 2002, and 2003.

## Research Participants

In 2001, which was the first year of data collection, 10,745 students completed a survey from 41 middle and high schools in northern and central Illinois. Of these students, 52% were female and 48% were male. The sample included the following racial groups: American Indian/Alaskan Native (0.2%); Asian, Native Hawaiian/Other Pacific Islander (4.0%); Black or African American (7.0%); White (70.3%); Middle Eastern (1.0%); Other (11.6%); and Multiracial (5.7%). In addition 11.7% of the sample identified as Latino. Of the sample, 28.2% were in 7th grade, 25.6% were in 8th grade, 24.9% were in 9th grade, and 21.4% were in 10th grade.

## Procedures

As part of the larger study, students completed a survey in their school during the months of March, April, and May of 2001, 2002, and 2003. The survey was administered to students in grades 7 to 10 during 2001, grades 7 to 11 in 2002, and grades 7 to 12 in 2003. All administrators were given a standardized protocol for administering the survey to students. 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. Students were also required to give written assent at the time of the survey administration. Students were instructed to refrain from writing their names on the actual survey in order to maintain their confidentiality. Instead, each student gave his or her assent on a separate sheet. Both the assent form and the survey had a tracking number, which could be used for tracking purposes.

In the present study, we were interested in following youth who received a ticket for tobacco use over the past year during the first survey administration in 2001. Of 19,845 eligible students, parental consent forms were obtained for 12,867 students (65%). A total of 10,745 eligible participants went on to complete the survey (54%). Of the surveyed students, 75 (.7%) were excluded from the analyses because of inconsistent or invalid responding across survey items. An additional 247 participants were excluded because they did not indicate whether or not they had received a ticket for possessing tobacco during the past year. The remaining 10,435 comprised the sample for the present study.

## Measures

### *Demographics*

Demographic information about the youth's gender, race, ethnicity, grade level, and mother's educational level was collected.

### *Smoking Status*

Smoking status was determined using four primary categories: never smokers (non-smokers who have never smoked), prior smokers (non-smokers who have quit and not smoked at all during the past 30 days), current smokers (current smokers who had smoked on at least 1 day in the past 30 days, but did not smoke daily), and daily smokers (smoked on all 30 days in the past 30 days). For the purposes of the present analyses, individuals were classified as current smokers or non-smokers. The primary outcome measure used to determine smoking status was 30-day point prevalence abstinence (the percent of youth who were completely abstinent for the 30 consecutive days prior to assessment). Backinger et al. (2003) reported that a CDC/SRNT expert panel recommended using 30-day point prevalence abstinence as the primary outcome measure (the percent of youth who have been completely abstinent for the 30 consecutive days prior to assessment). Test-retest reliability of the 30-day point prevalence measure has been previously established on a national school-based youth risk behavior survey ( $\kappa = 81.9\%$ ) (Brener, Kann, McManus, Kinchen, Sundberg, & Ross, 2002).

### *Attitudes toward Tobacco-Control Laws*

Seven questionnaire items were used to assess youth attitudes toward tobacco-control laws. Items assessing attitudes toward tobacco control laws were rated on a 5-point Likert scale from definitely not to definitely yes. The following seven items of the student survey were used to assess youth attitudes toward tobacco control laws: "Do you think the police in your town would give you a ticket for possessing tobacco?"; "Do you think that the police in your town should give a ticket to minors for possessing tobacco?"; "Will minors use less if police give them a ticket for possessing tobacco?"; "Do you think that the police in your town would give a ticket to storeowners who sell tobacco to minors?"; "Do you think that the police should give a ticket to storeowners who sell tobacco to minors?"; "Do you think that it will be difficult for minors to purchase tobacco if police ticket storeowners who sell tobacco to minors?"; and "Will minors use less tobacco if it becomes more difficult for them to purchase tobacco?" A factor analysis of these seven questions produced three internally consistent factors: a) attitudes and beliefs about tobacco sales laws; b) attitudes and beliefs about tobacco possession laws; and c) attitudes and beliefs about the efficacy of both types of laws. A coefficient alpha of .68 was found for youth attitudes toward the efficacy of tobacco control laws, .59 for youth attitudes toward tobacco possession laws, and .60 for youth attitudes toward tobacco sales laws. The intercorrelations among the factors suggested that the three factors were somewhat interrelated but still represented distinct constructs (intercorrelations ranged from .31 to .45) (Williams, Jason, & Pokorny, in press).

## RESULTS

In the first year of data collection, 89 children (approximately 1% of the sample) indicated that they had received a ticket over the past year for possessing or using tobacco. Of these children, 35 (39%) reported past 30-day abstinence from smoking at the time they were surveyed. The remaining proportion reported smoking at least 1 cigarette during the past 30 days, with 50% of this group reporting daily smoking. There were no significant differences in race, gender, or level of mother's education for current smokers versus non-smokers at baseline. There was a significant association with 30-day abstinence and grade level [ $\chi^2(3, n = 87) = 20.71, p = .000$ ], with students in grade 7 more likely to have reported being smoke-free during the past 30 days (84%) than those in grade 8 (35%), grade 9 (32%), or grade 10 (21%).

Among those who had been issued a fine, those not currently smoking compared to those currently smoking reported more favorable attitudes on a number of tobacco control policy dimensions. Children who had smoked in the past 30 days scored significantly lower on the factor assessing attitudes and beliefs toward efficacy of tobacco sales and possession laws compared to their non-smoking peers,  $t(82) = 4.20, p < .001$ , indicating that they are less likely to view sales laws as a barrier to purchasing tobacco, less convinced that sales laws promote reductions in youth tobacco use, and less likely to believe that possession laws are an effective tool for reducing youth tobacco use. A significant difference was also observed on the factor measuring attitudes and beliefs about tobacco possession laws, with youths who were smoking at baseline reporting less favorable attitudes toward laws that cite minors found to be in possession of tobacco,  $t(57) = 1.97, p < .05$ .

Children who reported having received a ticket for a PUP violation were followed at one and two year follow-ups. Of the 47 out of 89 (53% of the original sample) who provided data at the one year follow-up, 45% ( $n = 21$ ) reported continuous 30-day abstinence. Of the 32 children out of 89 (36% of the original sample) who provided data at the two year follow-up, 41% ( $n = 13$ ) reported not smoking during the past 30 days. There were no statistically significant differences by race, gender, grade, or level of mother's education between those who quit and those who did not at either of the two follow-up points. Assuming those who attrited were smokers, it is possible that about 15% (13/89) to 24% (21/89) of the original sample of youth cited actually quit smoking.

## DISCUSSION

These findings support those of Lazovich et al. (2001), Langer et al. (1999), and Langer and Warheit (2000), suggesting that possession fines might reduce youth tobacco use. Furthermore, the results are consistent with previous research suggesting that younger children may be more susceptible to the influence of this

policy tool, perhaps because they are more accepting of adult sanctions and less likely to have developed a regular smoking habit. Findings from the current study contribute to a growing body of evidence supporting the effectiveness of PUP laws for reducing youth smoking prevalence.

These are many possible explanations that might account for 30-day abstinence among children caught and fined for using tobacco. Clearly, those who were not smoking had more favorable attitudes toward youth tobacco control laws. It is possible to speculate that other tobacco prevention/cessation activities, apart from merchant fines for selling and fines for PUP law offenses, might have contributed to the cessation rates. We have previously sampled the types of prevention/cessation activities that were occurring in schools, but we found no relationship between these activities and tobacco use (Townsend, Pokorny, Jason, Curie, & Schoeny, 2002). More knowledge about processes that might account for changes in tobacco use among PUP law violators is critical for the development of successful community and policy responses to youth tobacco use.

There are several limitations in the current study. For example, because students were sampled within entire schools, the attrition rate was higher than would be expected if we were to target and follow specific individuals who violated PUP laws. We also had no biochemical confirmation of self-reported abstinence. In addition, it is unclear whether the fines or some other event was responsible for their self-reported abstinence. In other words, the survey only asked whether the youth had obtained a civic fine over the last year, and it did not assess whether receiving the fine was responsible for the youth quitting smoking. Prospective studies need to be designed to focus on the youth who have just been issued a PUP violation in order to fully understand what occurs following this intervention. This type of prospective research is methodologically superior to collecting self-report data during a school survey that occurs at one time point over the course of a year (this time point might be a few days from when the youth received a PUP offense to as long as a year from the PUP violation). In future studies, it is imperative to collect data soon after youth are caught violating PUP laws and follow them longitudinally.

The present study suggests that enforcement of PUP laws with fines might help reduce teen smoking. In addition, PUP laws might be an important tool for decreasing the visibility of youth smoking in public. This reduced visibility may decrease the effects of modeling and minimize the perception of teenage smoking as normal and acceptable behavior within the community (Jason, Pokorny, Sanem, & Adams, 2006). Alesci, Forster, and Blaine (2003) found that youth who witnessed youth or adult smoking in various public locations were more likely to perceive smoking as a socially acceptable behavior. Therefore, in addition to reductions in tobacco use among youth who get caught for a PUP violation, to the extent that PUP laws succeed in reducing public smoking among youth, these laws may play a key role in lowering youth smoking rates nationwide.

## ACKNOWLEDGMENTS

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Direct reprint requests to:

Leonard A. Jason, Ph.D.  
Center for Community Research  
990 Fullerton Avenue, Suite 3100  
Chicago, IL 60614  
e-mail: [ljason@depaul.edu](mailto:ljason@depaul.edu)