



YOUTH SMOKING: RISK FACTORS AND APPROACHES TO PREVENTING

Special Report

University of Pittsburgh Office of Child Development
Serving Children and Families By Promoting

Interdisciplinary Education and Research • University-Community Programs • Dissemination

Preventing children from becoming users of cigarettes and other tobacco products has been an enduring challenge in the United States. Each day, an estimated 3,000 U.S. adolescents try their first cigarette.¹ One-third will eventually die of tobacco-related illness.

In 1998, an important opportunity to curb youth smoking emerged when the tobacco industry agreed to pay \$206 billion to settle a class-action lawsuit filed over the costs of treating sick smokers in 48 states. The states are expected to receive substantial sums. Pennsylvania, alone, is expected to receive \$11.3 billion over 25 years in annual payments ranging from \$138 million to \$450 million.

One year after the settlement was announced, Pennsylvania and other states were still debating how best to spend their awards.

Most regular smokers started smoking as adolescents. Understanding the issues that surround youth smoking, therefore, is critical to designing policies that seek to reduce tobacco use as a way of improving the health and well-being of communities.

The Problem

Tobacco use is a learned behavior. It is the single leading preventable cause of death and disability in the United States. More tobacco-related deaths are reported each year than the combined death tolls of AIDS, homicide, automobile accidents, illegal drug use, and fires.

An estimated 400,000 Americans die each year from tobacco-related illness.² The direct medical costs of treating tobacco-related illness in the U.S. is equally staggering – an estimated \$50 billion a year, according to the Centers for Disease Control.

Youth At Risk

Young people who smoke are at significant risk of experiencing serious health problems in childhood, adolescence, and into adulthood. Smoking, for example, appears to reduce the rate of lung growth and lung function, increases the risk of respiratory problems during adolescence, and is a primary risk factor for coronary heart disease, arteriosclerotic peripheral vascular disease, and stroke.

For better than three decades, research warning that smokers are at much greater risk of developing heart disease, cancer, and other serious disorders has been widely reported in the scientific and popular press.

Yet, more adolescents are surrendering to influences that lead to tobacco use, such as peer pressure, smokers at home, industry advertising, and the ease with which they are able to obtain cigarettes. From the early- to the mid-1990s, current smoking among high school students increased from 27.8% to 34%, and from 15.5% to 21%

³ Current smoking is defined

The earlier adolescents begin using tobacco, the more heavily they use it as adults, and the longer they are use are related to eventual chronic health problems.⁴

Risk Factors

velops in stages, from the forming of attitudes and beliefs larly using tobacco, to addiction.

this development. These factors include the attitudes of tus of a child's family is also a factor, with children of come regular tobacco users. Other influences include bacco products.

The ability of young people to obtain tobacco prod- to minors is prohibited. But in most parts of the United virtually at will. In one study, 76% of 8 graders and or "very easy" to buy tobacco.

Peers & Family

stages of tobacco use. When adolescents try their first

cigarettes, it is usually done in the company of peers, who often set expectations about smoking and encourage experimenting with tobacco.

The use of tobacco among a child's parents does not appear to be as influential as the use of tobacco by the child's peers. Parents can, however, help dissuade children from tobacco use in a number of ways, such as by disapproving of smoking, encouraging academic achievement, becoming involved with a child during his or her free time, and building a strong and trusting relationship with the child.

How adolescents perceive their social environment may be a stronger influence than the actual environment itself. Many adolescents, for example, overestimate the number of people who smoke, and those who think "everyone is doing it" are more likely to become smokers.

Behavioral Factors

Behavioral factors play a role in the initiation of smoking or other tobacco use. Their influence is perhaps the strongest during adolescence, a tumultuous period when children are moving rapidly toward physical maturity, a coherent sense of self, and emotional independence.

Adolescents, in particular, are vulnerable to the notion that using tobacco will help them navigate these difficult changes. Those who perceive tobacco use as a positive factor in establishing friendships, becoming independent and mature, and developing their social image are at higher risk of becoming regular smokers.

Adolescents who smoke also tend to have lower self-esteem and lower self-images than those who don't smoke, suggesting that tobacco may serve as a self-enhancement mechanism. The lack of confidence to resist a peer's offer of tobacco is another factor that may contribute to an adolescent's first use of cigarettes.

Industry Advertising

The evidence that many adolescents attribute smoking in a positive way to peer bonding, maturity, and self image has not been lost on the tobacco industry. These perceptions are advanced in most cigarette advertising.

Cigarette advertisements have been banned from the broadcast media for nearly three decades. However, the industry continues to spend considerable sums on print advertising, promotional activities, outdoor billboards, and store displays.

Research suggests cigarette advertising increases young people's risk of smoking. For example, cigarette ads in the print media often use human models or cartoon characters to present images of youthful activities, independence, healthfulness, and adventure-seeking. Adolescents who have low self-images are particularly

vulnerable to the messages. The ads also tend to influence an adolescent's perceptions of the pervasiveness of smoking and the image of smokers.

Addiction

Once a smoker, adolescents and adults alike find quitting difficult. Nicotine found in tobacco is a highly addictive substance and is considered to be a leading reason why an estimated 60% of the smokers who try to quit fail to do so.

Adolescents who use tobacco regularly often exhibit symptoms of addiction. In general, they report that it is simply too difficult to quit. More specifically, 82% of regular tobacco users aged 10-18 years old report experiencing a strong urge to smoke or chew when trying to quit, 77% report feeling irritable, and 63% report feeling restless.

Many adolescents may not fully understand the risks of tobacco use, including nicotine addiction. Among students who were high school seniors during 1976-86, 44% of those who smoked daily said they believed they would not be smoking in five years. Five years later, 73% were still daily smokers.

Tobacco may also serve as a "gateway" drug. Research suggests that smokers are 15 times more likely to use marijuana and other illegal drugs.⁶

Prevention

The Surgeon General's warnings of the harmful effects of smoking were first required on cigarette packages in 1965. During the following three decades, broadcast ads for cigarettes were banned, insurers began offering nonsmoker discounts, and smoking was prohibited on airlines, buses, and in most public places.

Despite such incentives not to use tobacco, youth smoking continues to be a widespread problem in the U.S.

The number of studies that estimate the effect prevention strategies have on youth smoking is relatively thin and, in some cases, contradictory. At the very least, however, the research identifies several interventions that show promise in curbing the use of tobacco among young people.

Restricting Access

A crucial element of prevention is access to tobacco products. Adolescents report having little trouble buying cigarettes despite 1996 federal Department of Health and Human Services regulations that require all states to adopt laws prohibiting the sale of tobacco products to minors.

Researchers report that in most municipalities where

easy sources of cigarettes were eliminated by vigorously-enforced local laws, sales to minors and smoking among young people declined.

Common characteristics of successful laws include:

- Store owners, not just clerks, are subject to civil, not criminal, penalties for selling tobacco to minors.
- Fines are progressively more expensive and chronic violators face having their license to sell tobacco products suspended or revoked.
- Laws are regularly enforced using a variety of tactics, including the use of minors who are sent into stores to buy tobacco products as part of a compliance check.

Some laws also fine minors for illegal tobacco possession.

In Woodridge, Illinois, the percentage of regular smokers in the 7th and 8th grades fell from 16% to 5% two years after strictly-enforced laws prohibiting sales to minors were put into practice.⁷ Under the anti-smoking law, sales were monitored by police, minors faced fines for tobacco possession, and merchants who sold tobacco to minors were subject to fines and suspension of their licenses to sell tobacco.

In Massachusetts, the percentage of students aged 12-19 years who identified themselves as smokers fell from 22.8% to 15.8% two years after legislation was passed that enforced laws prohibiting stores from selling tobacco to minors.⁸

A large drop in the number of stores that sold tobacco to minors and a decline in smoking among 7th grade students were seen in a study that compared two communities that tried interventions designed to restrict youth access to tobacco with two control communities. Interventions included community education, merchant education, and a voluntary policy change aimed at restricting access to cigarettes. In the intervention communities, stores selling cigarettes to minors fell from 75% to 0 after three years. By comparison, 39% of the stores in the control communities still sold tobacco to minors after three years. Smoking rates fell from 13.1% of 7th-grade students to 12.6% in the communities embracing the interventions, but increased from 15.6% of 7th-grade students to 18.6% in control communities. However, no significant decrease in smoking among 9th or 11th grade students was seen, suggesting the interventions have the strongest influence on younger children.⁹

Tobacco Prices

Tobacco use among young people appears to be

price-sensitive to some degree. In general, the higher the price of cigarettes, the fewer young people who smoke. Government usually manipulates the price of tobacco products through the use of excise taxes.

One study estimates that a 10% increase in the price of cigarettes generally results in a 7% decrease in the number of teenagers who smoke.¹⁰

However, research indicates that higher cigarette excise taxes may lead to greater use of smokeless tobacco – a product equally detrimental to health – among young people, suggesting that across-the-board price increases may be necessary if reducing use of all types of tobacco products is the goal.

Advertising

Tobacco industry documents released during recent litigation show that companies systematically attempted to attract young people to cigarettes through advertising.

Evidence suggests that anti-smoking media campaigns may help counter tobacco industry advertising. However, studies of the effectiveness of such campaigns are sparse.

The American Psychological Association has issued guidelines for designing more effective anti-smoking advertising. The APA recommends that ad campaigns:

- Provide specific counter-arguments to points highlighted in tobacco ads.
- Avoid scare tactics, such as images of death or diseased organs.
- Portray tobacco users as different from the target audience, and non-smokers as similar to the target audience.
- Inform young people that the tobacco companies are trying to control their behavior.
- Refrain from describing teenage tobacco use as a widespread national problem.

Education

Prevention programs based in schools show promise. These programs are usually most effective when conducted early, before the 5th grade, when most children have not yet begun to experiment with tobacco.

Effective early prevention programs usually last several years, convey culturally-appropriate information about the social issues that tend to lead to tobacco use, and teach children skills to help them resist using tobacco, often through role playing, small group discussion, and opportunities for peer leadership. Proper

training and support for teachers and administrators are also important to the success of school-based programs.

been found to reduce later smoking by 28% when pro-¹¹

School-based prevention programs aimed at adolescents in tobacco use. Effective programs make adolescents aware of the media and social influences to use tobacco,

of tobacco use, and attempt direct peer influences toward abstaining from smoking.

with community-based interventions. Smoking among adolescents, for example, was found to be significantly

interventions such as media advocacy, restrictions on access to tobacco, and family communication about to-¹²

Policy Considerations

any effort to reduce tobacco use and the serious health consequences faced by those who smoke.

among states debating how to spend their share of the tobacco settlement if only for the fact that 90% of regu-

Several prevention strategies have been used to reduce smoking among young people. Rigidly-enforced

smokeless tobacco are particularly effective. Quality early prevention education in elementary schools also

Research suggests, however, that the best approach is one that restricts access to tobacco and promotes to-

including price increases, tough enforcement of youth access laws, advertising restrictions, and school-based

lead to tobacco use and teaches them the skills to say no to tobacco.

Jason, L.A., Biglan, A., & Katz, R. (1998). Implications of the tobacco settlement for the prevention of

Children's Services: Social Policy,
, 63-82.

EDITOR'S NOTE: *This Special Report, written by Jeffery Fraser, is largely based on the above-referenced reports. It is not intended to be an original work but a summary for the convenience of our readers. References noted in the text of this report follow.*

¹Pierce, J.P., Fiore, M.C., Novotny, T.E., Hatziaandreu, E.J., & Davis, R.M. (1989). Trends in cigarette smoking in the United States, projections to the year 2000. *Journal of the American Medical Association*, 261, 61-65.

²Centers for Disease Control (1993). Cigarette smoking-attributable mortality and years of life lost – United States, 1990. *Morbidity and Mortality Weekly Report*, 42, 645-649.

³Johnson, L.D. (1996). *Cigarette smoking continues to rise among American teenagers in 1996*. Ann Arbor: The University of Michigan Press.

⁴U.S. Department of Health and Human Services. (1994). *Preventing Tobacco Use Among Young People: A Report of the Surgeon General* (U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health). Washington, DC: U.S. Government Printing Office.

⁵Strouse, R., & Hall, J. (1994). *Robert Wood Johnson Foundation youth access survey: Results of a national household survey to assess public attitudes about policy alternatives for limiting minor's access to tobacco products* (Rep. No. 26023). Mathematica Policy Research, Inc.

⁶*Preventing Tobacco Use Among Young People: A Report of the Surgeon General*.

⁷Jason, L.A., Billows, W.D., Schnopp-Wyatt, D.L., & King, C.P. (1996). Long-term findings from Woodridge in reducing illegal cigarette sales to older minors. *Evaluation and the Health Professions*, 19, 3-13.

⁸DiFranza, J.R., Carlson, R., & Caisse, R. (1996). Reducing youth access to tobacco. *Tobacco Control*, 1, 58.

⁹Altman, D.G., Wheelis, A.Y., McFarlane, M., Lee, H., & Fortmann, S.P. (1998). *The relationship between tobacco access and use among adolescents: A four community study*. Manuscript submitted for publication.

¹⁰Grossman, M., Chaloupka, F.J. (1997). Cigarette taxes: The straw to break the Camel's back. *Public Health Reports*, 112, 2911-297.

¹¹Flynn, B.S., Worden, J.K., Secker-Wlaker, R.H., Pirie, P.L., Badger, G.J., Carpenter, J.H., & Geller, B.M. (1994). Mass media and school interventions for cigarette smoking prevention: Effects 2 years after completion. *American Journal of Public Health*, 84, 1148-1150.

¹²Biglan, A., Ary, D.V., Duncan, T.E., Black, C., & Smolkowski, K. (1998). *Randomized control trial of a community intervention to prevent adolescent tobacco use*. Manuscript in preparation.

**University of Pittsburgh Office of Child Development, a program of the University
Center for Social and Urban Research, 121 University Place, Second Floor,
Pittsburgh, PA 15260 (412)624-7426. Internet: www.pitt.edu/~ocdweb/.**