

Rhode Island Youth Tobacco Use: Implications for Pediatricians and Family Physicians

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INTRODUCTION

Tobacco use is the leading cause of preventable death, disease, and disability in the United States.¹ More than 80% of adult smokers begin before the age of 18.²⁻⁴ People who begin smoking during adolescence are more likely to experience smoking-related health problems. The annual adult health-related financial burden of cigarette smoking as a result of initiation of smoking during adolescence is \$193 billion.⁵ In Rhode Island, the annual health care costs directly caused by smoking totals \$506 million.⁶ Each Rhode Island household spends \$717 annually on smoking-related government expenditures.⁶

Persons working with young people know well that developmental changes during childhood and adolescence usher in an increase in risky behaviors beginning around the time of puberty. Risk-taking is often a way teens assert their independence from parents, other adults, and authority figures. Thus, for young people, the transition to adulthood is replete with both opportunities and risks. Adolescence is a critical time during which protection against tobacco use experimentation and uptake is imperative, given adolescents' propensity for risk-taking and independence asserting, and given that people who begin using tobacco at an earlier age are more likely to develop more severe levels of nicotine addiction.⁷ One of the Centers for Disease Control and Prevention's (CDC) primary and overarching tobacco control goals is preventing youth from initiating tobacco use.

METHODS

Data from the 1997-2011 Rhode Island Youth Risk Behavior Surveillance Survey (YRBS) were used to assess tobacco use rates among high school youth. The YRBS is conducted every other year in Rhode Island public high schools and middle schools and in public schools in other states across the country to assess six major risk-behavior areas, including tobacco. An in-depth description of YRBS methodology,

including weighting procedures, is described in a *Morbidity and Mortality Weekly Report* and can be accessed on the CDC's website.⁸

RESULTS

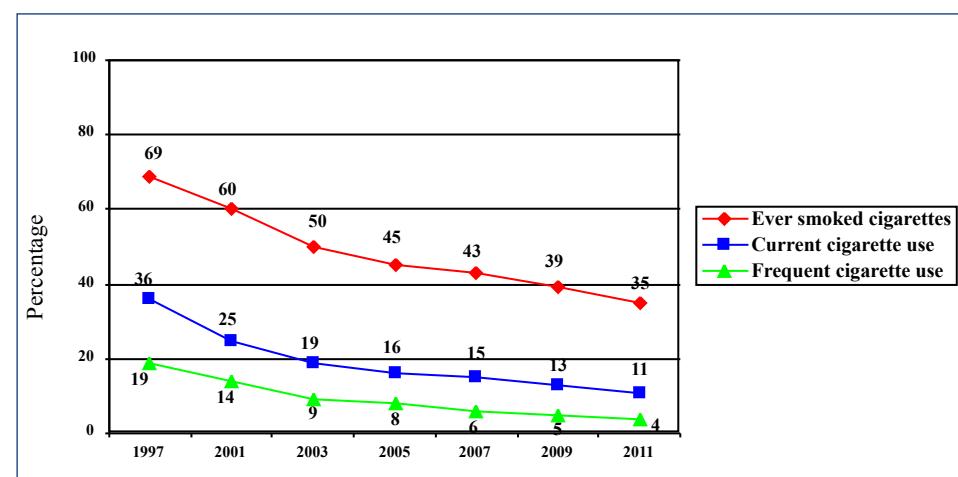
Current cigarette use among Rhode Island high school students

The percentage of Rhode Island public high school students who reported currently smoking cigarettes shows an important downward trend from 36% in 1997 to 11% in 2011 (Figure 1). There also was a significant drop in the percentage of high school students who reported ever smoking cigarettes over the past 15 years from a high of 69% in 1997 to 35% in 2011 (Figure 1). A decline in adolescent tobacco use is an encouraging sign for public health and prevention.

Current cigar use among Rhode Island high school students

Overall, 12.0% of Rhode Island public high school students have smoked cigars, cigarillos, or little cigars on at least 1 day during the 30 days before the survey (i.e., current cigar use; Table 1). The prevalence of current cigar use was higher among 17- to 18-year-old youth (15.4%) than younger

Figure 1. Trends in the percentage of Rhode Island public high school students who reported lifetime (ever) smoking, current smoking, and frequent cigarette use, 1997–2011



Data source: 1997 to 2011 Rhode Island High School Youth Risk Behavior Survey weighted data files. Rhode Island Department of Health Center for Health Data and Analysis.

age students (8.1%); higher among male (17.9%) than female (5.8%) high school students; and higher among 12th graders (15.1%) than 9th graders (8.5%). Non-Hispanic white high school students were more likely than Hispanic high school students to smoke cigars (12.9% vs. 9.3%).

Current smokeless tobacco use among Rhode Island high school students

In Rhode Island, 6.1% of public high school students have used smokeless tobacco (e.g., chewing tobacco, snuff, or dip) on at least 1 day during the 30 days before the survey (i.e., current smokeless tobacco use; Table 1). Overall, the prevalence of current smokeless tobacco use was higher among male (9.9%) than female (2.2%) high school students; and higher among 12th-graders (7.8%) than 9th-graders (4.7%).

Race/ethnicity data from the Rhode Island High School Youth Risk Behavior Survey (YRBS) are not analyzed for non-Hispanic black high school students. The number of non-Hispanic black high school students who report smoking cigarettes or using other tobacco products in the Rhode Island YRBS is too small for meaningful comparisons with non-Hispanic white and Hispanic students.

Racial/ethnic minority youth

In a larger analysis conducted by the authors for publication in an upcoming Rhode Island Department of Health burden of tobacco document, YRBS data showed that Hispanic middle school students are nearly twice as likely to smoke cigarettes as non-Hispanic white middle school students. In contrast, the percentage of non-Hispanic white high school students who currently smoke cigarettes or smoke cigars is significantly higher than for Hispanic high school students (Table 2). About 16% of non-Hispanic white high school students currently smoke cigarettes and 13% smoke cigars. Among Hispanic high school students, 8.2% currently smoke cigarettes and 9.3% smoke cigars. Both groups of high school students reported similar use of smokeless tobacco products (6% non-Hispanic

Table 1. Characteristics of Rhode Island high school youth by type of tobacco product¹, 2007–2011

	Current Cigarette Use		Current Cigar Use		Current Smokeless Tobacco Use	
Characteristics	Weighted percentages	(95% CI)	Weighted percentages	(95% CI)	Weighted percentages	(95% CI)
Total Population	13.3	11.4–15.3	12.0	10.9–13.0	6.1	5.3–6.8
Age						
12 to 14 years old	8.1	5.5–10.6	8.1	6.3–10.0	--	--
15 years old	10.0	7.9–11.9	8.0	6.8–9.2	--	--
16 years old	14.8	12.2–17.5	13.2	11.2–15.2	6.3	4.9–7.7
17 to 18 years old	16.9	13.6–20.1	15.4	13.6–17.3	7.8	6.2–9.5
Sex						
Female	12.2	10.9–14.5	5.8	4.8–6.8	2.2	1.6–2.7
Male	14.3	11.9–16.8	17.9	16.3–19.5	9.9	8.7–11.3
Grade						
9th	10.1	8.1–12.1	8.5	7.4–9.6	4.7	3.9–5.4
10th	11.5	9.2–13.8	10.3	8.6–2.0	5.2	3.7–6.6
11th	15.6	12.2–9.0	14.2	12.2–6.3	6.3	4.9–7.6
12th	16.8	13.8–19.9	15.1	12.7–17.5	7.8	5.9–9.6
Race/ethnicity						
Hispanic	8.2	5.7–10.7	9.3	6.9–11.7	6.8	5.7–7.9
Non-Hispanic black ²	--	--	--	--	--	--
Non-Hispanic white	15.5	13.8–17.3	12.9	11.9–13.9	6.2	5.0–7.3

¹Definitions:

Current cigarette use. Smoked cigarettes on at least 1 day during the 30 days before the YRBS survey.

Current cigar use. Smoked cigars, cigarillos, or little cigars on at least 1 day during the 30 days before the survey.

Current smokeless tobacco use. Used smokeless tobacco (chewing tobacco, snuff, or dip), on at least 1 day during the 30 days before the survey.

²A dash (--) indicates that there were < 100 respondents for the subgroup and data were not weighted.

Data source: 2007, 2009 & 2011 Rhode Island High School Youth Risk Behavior Survey combined and weighted data file.

white high school students and 7% Hispanic high school students). About 8.4% of non-Hispanic white high school students report trying flavored cigarettes in the past year compared to 6.7% of Hispanic high school students.

Lesbian, gay, bisexual, unsure (LGBU) youth

Among Rhode Island high school students, tobacco use is more common among lesbian, gay, bisexual, and unsure (LGBU) high school youth than other high school students (Table 2). Current cigarette smoking is nearly three times higher (31% vs. 12%) and current cigar smoking is nearly twice as high (20.3% vs. 12.3%) among LGBU high school students. The data do not tell us why there is high use of tobacco products among LGBU high school students in Rhode Island.

Smoking may be due to stressors unique to the sexual identities and experiences of LGBU youth, including discrimination and lack of family acceptance. Nationally, LGBU youth smoke at rates much higher rates (38–59%) than all adolescents during the same time period (28–35%).⁹

Youth with disabilities

Current tobacco use is also high among Rhode Island high school youth with physical and/or emotional disabilities (Table 2). Youth with physical disabilities are more likely than those without physical disabilities to currently smoke cigarettes (20.3% vs. 12.3%), to smoke cigars (18.0% vs. 10.9%), to use smokeless tobacco products (9.7% vs. 5.4%), and try flavored cigarettes (13.3% vs. 7.1%). High school students with emotional and learning disabilities are more likely than those without these disabilities to currently smoke cigarettes (20.3% vs. 12.3%), to smoke cigars (18.0% vs. 10.9%), to use smokeless tobacco products (9.7% vs. 5.4%), and try flavored cigarettes (15.7% vs. 6.6%). Since youth with disabilities are often excluded from peer-initiated social activities and are frequently bullied, they may see smoking as a way of gaining acceptance from others. An analysis of the 2011 Rhode Island YRBS showed that high school students with a physical, mental, or learning disabilities were far more likely to be bullied than students without these disabilities (33% versus 16%). Nearly one-fourth of students with a disability who reported being recently bullying also smoked cigarettes (23.5%). The YRBS is a cross-sectional data set and causation between bullying and smoking cannot be determined. Nevertheless, whole-school antibullying/antiviolence programs that include messages to reduce other behaviors, such as smoking, are necessary to effectively address complex risk behaviors among youth.

DISCUSSION

While cigarette-smoking trends have decreased for the overall Rhode Island high school youth population, youth's use of cigars outstrips their use of cigarettes. Youth's use of cigars and cheap smokeless and other tobacco products pose a clear risk to the gains made in tobacco control in our state.

Table 2. Priority populations for tobacco prevention among Rhode Island high school youth by current tobacco use, 2007–2011

Characteristics	Current Cigarette Use		Current Cigar Use		Current Smokeless Tobacco Use	
	Weighted percentages	(95% CI)	Weighted percentages	(95% CI)	Weighted percentages	(95% CI)
Total Population	13.3	11.4–15.3	12.0	10.9–13.0	6.1	5.3–6.8
Race/ethnicity						
Non-Hispanic white	15.5	13.8–17.3	12.9	11.9–13.9	6.2	5.0–7.3
Hispanic	8.2	5.7–10.7	9.3	6.9–11.7	6.8	5.7–7.9
Non-Hispanic black ¹	--	--	--	--	--	--
Self-identify as gay, lesbian, bisexual						
No	12.0	10.1–14.0	11.2	10.1–12.4	5.6	4.8–6.3
Yes	31.6	24.8–38.5	20.7	16.3–25.1	--	--
Have physical disabilities						
No	12.3	10.5–14.0	10.9	9.8–12.0	5.4	4.7–6.1
Yes	20.3	16.6–24.1	18.0	15.6–20.4	9.7	7.4–11.9
Have emotional problems or learning disabilities						
No	11.4	9.7–13.1	10.6	9.6–11.7	5.1	4.5–5.7
Yes	25.4	21.9–29.0	18.4	16.9–20.0	10.9	8.5–13.2

¹A dash (--) indicates that there were < 100 respondents for the subgroup and data were not weighted.

Data source: 2007, 2009 & 2011 Rhode Island High School Youth Risk Behavior Survey combined and weighted data file.

Policies that are effective in delaying initiation of smoking or preventing smoking in youth can help reduce the percentage of people with smoking-related health problems in the future. One best practice advocated by the CDC is taxing tobacco products so that cigarettes and other tobacco products are equally expensive to buy. High taxes on tobacco products have been shown to prevent the initiation of smoking and get smokers to quit smoking, with the greatest impact on youth and people with limited household income.¹⁰ Rhode Island currently has the second highest cigarette tax in the United States at \$3.50 per pack.

As with cigarette smoking, smokeless tobacco use is almost always initiated and established during adolescence. Use of cigars and smokeless tobacco products is becoming more common among high school youth as the tobacco industry markets sweetened, flavored, and cheap smokeless tobacco that can taste more like candy, which make these products more appealing to young people. While the U.S. Food and Drug Administration (FDA) banned certain flavored cigarettes in 2009,¹¹ tobacco companies rebranded flavored cigarettes as "cigarillos" or "cigars" to avoid FDA regulations.

At least four policy and practice implications are relevant given CDC best and promising practices. First, considering the importance families and decision makers place on the role of physicians in our society, physician awareness of tobacco-control best practices can position pediatricians and family physicians to help build a Rhode Island that continues to reject the use of tobacco as an acceptable social norm. Second, as youth's use of smokeless, flavored, and emerging tobacco products begins to become more popular than the use of cigarettes, pediatricians and family physicians can speak with their patients and families about the dangers of these products and educate decision makers about the role high taxes on all tobacco products plays in keeping tobacco out of young people's hands. Third, physicians can be aware that young patients who identify as LGBT, have emotional and learning disabilities, or are minority youth, such as African American and Hispanic youth, may be especially vulnerable to targeted ads and promotions by the tobacco industry, and are at an increased risk for initiation of tobacco use. Being familiar with these at-risk youth populations may prove helpful during patient well visits. Finally, young people who live with a smoker, whether the smoker is a parent or sibling, are more likely to smoke. Physicians should advise all patients who smoke to quit as quitting has positive impacts not only on the individual's health but also on the health of the entire family.

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