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BRIEF REPORT

Prevalence of youth cigarette smoking and selected social factors in 25 European countries: findings from the Global Youth Tobacco Survey

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Abstract
Objectives To present Global Youth Tobacco Survey (GYTS) data on the prevalence of cigarette smoking and selected social factors among students aged 13–15 years in 25 European countries.
Methods The GYTS is a school-based survey of students aged 13–15 years. The GYTS was conducted in 25 European countries (2002–2005) and produced representative data for each country.
Results In 25 European countries studied, 22% of boys and 18% of girls smoked cigarettes. In 17 of 25 countries, current cigarette smoking did not differ between boys and girls. Exposure to secondhand smoke is very high throughout the 25 countries. Exposure to pro-tobacco indirect advertising (having tobacco company logos on promotional items and being given free cigarettes) is frequent throughout the countries.
Conclusions Intensified efforts to lessen harm caused by tobacco use among youth in 25 European countries included in this study are urgently needed. These countries need to develop and implement comprehensive tobacco control programs including public education campaigns, cessation programs, enforcement of existing measures, and related policy efforts. The WHO FCTC provides a useful framework for implementing such a comprehensive approach.

Keywords Smoking · Adolescents · Tobacco smoke pollution · Indirect pro-tobacco advertising

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Introduction

Tobacco use is a major preventable cause of death in the world. The World Health Organization (WHO) attributes more than 4 million deaths a year to tobacco, a figure that is expected to increase to 10 million deaths a year by 2020 (Mathers and Loncar 2006). Surveillance of tobacco use is necessary in order to plan, implement, and evaluate tobacco control programs. In general, the main goal of a comprehensive tobacco control program is to improve the health of the population by encouraging smokers to quit, eliminating exposure to secondhand smoke, and prevent non-smokers from initiating smoking. Previous studies have shown that demand reduction measures, primarily those that increase the price of tobacco, are effective in reducing consumption among adults who smoke and can encourage cessation among adults (Jha and Chaloupka 1999, 2000). These studies suggest that increased price of tobacco products may lead to reducing initiation of tobacco use and consumption among young people. In addition to demand-reduction measures, comprehensive tobacco control programs should include non-price interventions such as restrictions on smoking in public places and work places; a complete ban on advertising and promotion by

tobacco companies; dissemination of information on the health consequences of smoking through various media such as prominent warning labels on cigarette packets and counter marketing campaigns; and development and implementation of school-based educational programs in combination with community-based activities.

WHO, the US Centers for Disease Control and Prevention, and the Canadian Public Health Association developed the Global Youth Tobacco Survey (GYTS) to provide systematic global surveillance of youth tobacco use (Global Youth Tobacco Survey Collaborative Group 2002; Warren et al. 2006). Countries can use GYTS data to enhance their capacity to monitor tobacco use among youth; guide development, implementation, and evaluation of their national tobacco prevention and control program; and allow comparison of tobacco-related data at the national, regional, and global levels. GYTS data can also fulfill many of the surveillance requirements of the WHO Framework Convention on Tobacco Control (WHO FCTC). Countries that have ratified the WHO FCTC are required to establish surveillance of "the magnitude, patterns, determinants, and consequences of tobacco consumption and exposure to tobacco smoke" (World Health Organization 2003).

This paper, being a follow-up to earlier similar articles (Baška et al. 2006, 2007), analyses the GYTS data from 25 European countries grouped into regions: Baltic (Estonia, Latvia and Lithuania), Central Europe (Czech Republic, Hungary, Poland, and Slovakia), Eastern Europe (Belarus, Moldova, Russia, and Ukraine), South-Eastern Europe (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, FYR Macedonia, Greece, Montenegro, Romania, Serbia, Slovenia, and Turkey), and Caucasus (Armenia and Georgia).

Its purpose is to identify similarities and differences in tobacco use, its initiation and susceptibility, exposure to second-hand smoking, compliance with legislation related to indirect tobacco advertisement as well as school curricula among adolescents aged 13–15 years across 25 European countries.

Methods

The GYTS uses a standardized methodology for constructing sampling frames, selecting schools and classes, preparing questionnaires, carrying out field procedures, and processing data (Office on Smoking and Health 2008). The survey queries prevalence of cigarette smoking, its initiation before age 10 and susceptibility, exposure to secondhand smoking in homes and outside homes, parental smoking, indirect tobacco advertisement (with the cigarette brand logo on it and being offered free cigarettes by a tobacco company representative) and school curricula (taught in class about the health effects of smoking, taught in class about the dangers of smoking and discussed in class, why people their age smoke).

The GYTS is a school-based survey of defined geographic sites that can be countries, provinces, cities, or any other sub-national areas, or territories. The GYTS uses a two-stage cluster sample design that produces representative samples of students in grades associated with age 13–15 (Office on Smoking and Health 2008). The sampling frame includes all schools containing any of the identified grades. At the first stage, the probability of schools being selected is proportional to the number of students enrolled in the specified grades. At the second sampling stage, classes within the selected schools are randomly selected. All students in selected classes attending school on the day of the survey are administered and are eligible to participate. Student participation is voluntary and anonymous using self-administered data collection procedures. The GYTS sample design produces representative, independent, cross-sectional estimates for each site.

Bulgaria, Czech Republic, and Latvia completed the GYTS in 2002; Bosnia and Herzegovina, Croatia, Estonia, FYR Macedonia, Georgia, Hungary, Poland, Republic of Serbia, Slovakia, Slovenia, and Turkey completed it in 2003; Albania, Armenia, Belarus, Moldova, Montenegro, Romania, and Russian Federation completed it in 2004; and Cyprus, Greece, Lithuania, and Ukraine completed it in 2005. All countries completed nationally representative surveys. Only data for 13- to 15-year-old students from each country were included in this report. School response rates ranged from 100% (16 countries) to 85.9% (Ukraine). Student response rates were above 80% in all countries except Romania (58.0%). Overall response rates (calculated as the school response rate multiplied by the student response rate) were above 80% in all countries except Greece (79.2%), Estonia (78.2%), Poland (72.4%), and Romania (58.0%).

This report describes several important indicators of tobacco use: current cigarette smoking (defined as smoking cigarettes on at least 1 day during the month preceding the survey); initiation of smoking before age 10 by ever smokers, susceptibility (two questions were used to construct a measure of susceptibility to initiate smoking among never smokers: "If one of your best friends offered you a cigarette would you smoke it?" and "Do you think you will smoke a cigarette during the next year?" Those who answered "Definitely No" to both questions were defined as "Not Susceptible," all others were defined as susceptible), exposure to secondhand smoke (SHS) at home and outside the home, parental smoking, exposure to indirect tobacco advertising (having an object with a tobacco company logo on it and ever having been offered a free cigarette by a tobacco company representative), and having

been taught in school about the dangers of tobacco. The final country questionnaires were translated into national languages and back translated to check for accuracy. GYTS country research coordinators conducted focus groups of students aged 13–15 to further test the accuracy of the translation and student understanding of the questions.

A weighting factor was applied to each student record to adjust for non-response (by school, class, and student) and variation in the probability of selection at the school, class, and student levels. A final adjustment summed the weights by grade and gender to the population of school children in the selected grades in each sample site. SUDAAN, a software package for statistical analysis of correlated data, was used to compute standard errors of the estimates, and produced 95% confidence intervals by multiplying the standard errors by 1.96 (Shah et al. 1997). Differences in proportions were considered statistically significant at the $P < 0.05$ level.

Results

Overall, among students in the 25 European countries, 22.0% of boys and 17.8% of girls smoked cigarettes (Table 1). For boys, current cigarette smoking was highest in Georgia (35.5%) and lowest in Montenegro (6.0%); for girls current smoking was highest in Bulgaria (39.4%) and lowest in Armenia (0.9%). For boys and girls, current cigarette use was greater than 20% in all Baltic, Central (except Poland for boys and girls), and Eastern European countries (except Moldova for girls). Boys were significantly more likely than girls to currently smoke cigarettes in 7 of the 25 countries; girls were significantly more likely than boys to currently smoke cigarettes in Bulgaria; there was no difference by gender in the 17 other countries.

Almost 4 in 10 boys (37.0%) and 2 in 10 girls (21.6%) in the 25 European countries who ever smoked cigarettes, initiated smoking before age 10 (Table 1). Early initiation of smoking was more than 40% for boys in the Baltic, Eastern Europe (except Belarus), and Caucasus regions. Boys were significantly more likely than girls to initiate smoking early in 13 of the 25 countries; there was no difference by gender in the 12 other countries.

Among students in the 25 European countries who had never smoked cigarettes, 29.9% of boys and 35.8% of girls indicated that they were susceptible to initiate smoking in the next year (Table 1). Susceptibility to smoke was highest in Moldova for both boys and girls and was lowest in Turkey for both boys and girls. There was no difference by gender in 22 of the 24 countries that asked the questions; boys were significantly more likely than girls to be susceptible in Hungary and Turkey.

Exposure of students to second hand smoke (SHS) was very high throughout the 25 European countries (Table 2). Almost 8 in 10 students (78.7%) reported being exposed to smoke at home; 87.3% reported they were exposed to smoke from others in public places during the past week; and 61.6% reported at least one of their parents smoked. Exposure to SHS at home was over 90% in 7 of the 25 countries; exposure to SHS in public places was over 90% in 10 of the 25 countries.

Almost 2 in 10 students in 25 European countries (18.2%) reported that they had an object with a cigarette brand logo on it and 10.9% reported that they had ever been offered "free" cigarettes by a tobacco company representative (Table 2). Having an object with a tobacco company logo on it was highest in Latvia (33.2%) and lowest in Turkey (10.1%). Being offered free cigarettes was over 20% in Poland, Republic of Serbia and Montenegro.

Approximately, 6 of 10 students in the 25 European countries report that they had been taught in class during the past school year about the dangers and harmful health effects of tobacco use (57.6 and 62.7%) (Table 2). Half of the students (49.8%) reported that they had discussed in their class why young people smoke (Table 2). Being taught about the harmful health effects of tobacco use was highest in the Ukraine and the Eastern European region and lowest in Georgia.

Discussion

Results from this study show that the prevention and control of youth cigarette smoking in the 25 European countries face many serious challenges. First, GYTS results show disappearance of traditional gender differences, particularly on account of increased prevalence of tobacco use among girls. In 17 of the 25 countries, there was no difference in current cigarette smoking among boys and girls. On the other hand, the existing data for adults in Europe show a very different pattern suggesting tobacco smoking is primarily a problem for males rather than females (prevalence of adult smoking among males 40.0 vs. 18,2% females, a 2.2:1 ratio) (The European Tobacco Control Report 2007). Further, the level of smoking among girls was higher than for adult females in 13 of the 25 countries, especially in the Baltic, Central, and Eastern regions (The European Tobacco Control Report 2007; Mackay et al. 2006). Although such comparison of adolescents and adults is disputable, it underlines above-mentioned problem. Moreover, susceptibility to initiate smoking among never smokers was significantly higher than current cigarette smoking for boys and girls in the Eastern European region and for girls in 16 of the 24 countries where

Table 1 Prevalence of cigarette smoking and susceptibility to initiate smoking among never smokers in 25 European countries, Global Youth Tobacco Survey (GYTS)

Region/Country	Current cigarette users		Smoking initiation before age 10		Never smokers susceptible to smoke	
	Boys % (95% CI)	Girls % (95% CI)	Boys % (95% CI)	Girls % (95% CI)	Boys % (95% CI)	Girls % (95% CI)
Baltic						
Latvia	33.8 ± 3.3	27.8 ± 4.7	45.4 ± 4.8	27.1 ± 3.8	24.1 ± 8.3	24.9 ± 6.8
Estonia	29.8 ± 3.4	27.4 ± 3.5	47.0 ± 3.3	27.2 ± 3.9	33.1 ± 6.3	38.3 ± 6.7
Lithuania	33.8 ± 4.8	25.9 ± 5.3	41.5 ± 5.7	23.5 ± 5.4	18.3 ± 10.1	18.1 ± 4.8
Central Europe						
Poland	19.6 ± 5.5	17.1 ± 3.4	31.4 ± 5.0	22.8 ± 5.3	20.6 ± 4.8	26.6 ± 4.9
Czech Republic	34.0 ± 4.5	35.1 ± 4.5	32.8 ± 2.8	19.3 ± 2.8	18.4 ± 5.6	29.1 ± 6.0
Slovakia	28.1 ± 3.3	24.3 ± 2.5	35.1 ± 3.7	21.1 ± 3.8	21.5 ± 4.8	26.4 ± 5.4
Hungary	26.7 ± 4.5	26.8 ± 4.4	23.1 ± 4.2	17.0 ± 4.8	15.6 ± 4.7	29.8 ± 5.3
Eastern Europe						
Belarus	31.2 ± 3.8	21.7 ± 3.1	38.0 ± 3.6	20.4 ± 4.3	43.4 ± 7.2	52.6 ± 5.3
Russian Federation	26.9 ± 3.7	23.9 ± 3.5	40.7 ± 4.3	17.8 ± 1.9	42.3 ± 6.5	50.3 ± 6.7
Ukraine	27.6 ± 3.9	20.6 ± 4.2	40.4 ± 4.8	21.4 ± 4.0	55.1 ± 7.0	66.0 ± 5.5
Moldova	23.0 ± 5.2	6.0 ± 2.2	51.1 ± 4.4	33.5 ± 7	60.3 ± 5.4	69.9 ± 4.2
South-eastern Europe						
Slovenia	21.4 ± 3.3	23.9 ± 4.6	31.5 ± 4.5	24.5 ± 2.9	24.0 ± 4.0	31.3 ± 4.4
Croatia	19.9 ± 4.4	16.4 ± 3.5	38.0 ± 5.1	32.4 ± 5.7	18.1 ± 4.5	21.6 ± 6.3
Bosnia and Herzegovina	13.6 ± 3.2	8.9 ± 2.3	38.4 ± 3.9	36.9 ± 6.1	26.6 ± 3.2	23.1 ± 4.4
Republic of Serbia	12.2 ± 2.4	13.1 ± 3.1	36.8 ± 4.8	30.2 ± 5.8	16.5 ± 4.1	21.8 ± 3.9
Montenegro	6.0 ± 2.6	5.0 ± 2.6	54.8 ± 9.1	37.6 ± 10.1	19.9 ± 4.5	16.8 ± 3.4
FYR Macedonia	8.5 ± 4.7	6.8 ± 3.8	22.3 ± 8.2	16.7 ± 7.2	14.4 ± 3.9	17.7 ± 5.3
Bulgaria	26.0 ± 4.8	39.4 ± 5.5	24.9 ± 4.2	14.2 ± 4.4	25.5 ± 5.3	34.3 ± 7.0
Romania	21.5 ± 6.5	14.3 ± 3.4	35.7 ± 5.0	22.1 ± 5.8	19.7 ± 9.2	33.7 ± 13.2
Albania	11.9 ± 3.6	5.8 ± 1.7	28.5 ± 5.3	20.9 ± 9.0	15.5 ± 3.8	13.1 ± 3.5
Greece	11.3 ± 2.3	9.0 ± 2.3	25.5 ± 4.0	21.4 ± 5.1	19.4 ± 2.6	19.4 ± 2.7
Cyprus	12.3 ± 1.8	8.2 ± 1.4	20.4 ± 2.6	13.6 ± 2.9	15.0 ± 1.4	15.5 ± 1.7
Turkey	9.4 ± 1.5	3.5 ± 0.8	34.9 ± 2.5	23.7 ± 4.8	8.2 ± 1.0	5.3 ± 0.8
Caucasus						
Georgia	35.5 ± 4.8	12.9 ± 3.3	51.7 ± 6.4	47.4 ± 4.9	17.5 ± 7.7	25.4 ± 3.5
Armenia	10.3 ± 3.2	0.9 ± 1.3	44.3 ± 6.8	53.4 ± 16.6	NA	NA
Total	22.0	17.8	37.0	21.6	29.9	35.8

NA question not asked

comparisons could be made. The susceptibility index was developed by Pierce et al. (1996) and has been shown to be a strong predictor of smoking initiation among adolescents. Youth defined as susceptible have been found to be two to four times more likely to initiate smoking than non-susceptible youth (Pierce et al. 1996; Prokhorov et al. 2002). The high level of smoking among girls suggests the need for tobacco control programs that target girls specifically. Although recent data show a substantial decline in smoking among young women in the United States and Scandinavian countries, our result indicate a rather different picture in other parts of Europe. External validity of his finding is supported by another study reporting consistently with GYTS remarkable increased rate of tobacco use among adolescent girls (Arvanitidou et al. 2008). Transnational tobacco companies continue to identify women and girls as a major untapped market (Samet and Yoon 2001). These findings can be also put into context with the descriptive model for cigarette smoking epidemic developed by Lopez et al. 1994. According to this model, most of the surveyed 25 European countries currently fall into its third or even second stage characterized by distinct predominance of smoking of men and gradual growth of smoking of women. Such development leads to disappearance of gender

Table 2 Selected factors related to tobacco smoking in 25 European countries, Global Youth Tobacco Survey (GYTS)

Country	SHS exposure in homes %(95% CI)	SHS exposure outside homes % (95% CI)	One or more parents smoke % (95% CI)	Have an object with the cigarette brand logo on it % (95% CI)	Were ever offered free cigarettes by a tobacco company representative % (95% CI)	Taught in class about the health effects of smoking % (95% CI)	Taught in class about the dangers of smoking % (95% CI)	Discussed in class, why people their age smoke % (95% CI)
Baltic								
Latvia	59.0 ± 2.8	71.3 ± 2.0	63.4 ± 3.5	33.2 ± 2.5	4.6 ± 1.3	47.2 ± 3.5	56.6 ± 3.8	41.6 ± 3.6
Estonia	80.6 ± 1.6	90.7 ± 0.9	58.7 ± 2.4	26.3 ± 2.0	15.2 ± 2.0	47.6 ± 4.8	59.0 ± 3.4	45.3 ± 3.7
Lithuania	47.0 ± 3.2	66.5 ± 6.5	58.1 ± 3.2	16.2 ± 2.0	5.2 ± 1.3	29.9 ± 6.0	35.0 ± 5.4	29.1 ± 5.1
Central Europe								
Poland	86.7 ± 2.4	90.4 ± 1.6	58.5 ± 2.7	26.5 ± 2.8	25.7 ± 2.5	50.6 ± 4.0	57.3 ± 4.3	47.6 ± 4.5
Czech Republic	41.1 ± 3.0	74.5 ± 2.2	53.7 ± 2.8	24.8 ± 1.8	7.9 ± 1.3	53.8 ± 3.9	64.6 ± 3.9	51.1 ± 3.3
Slovakia	79.5 ± 2.2	85.7 ± 1.2	55.1 ± 2.3	26.2 ± 2.3	7.5 ± 1.3	61.0 ± 3.5	70.0 ± 3.1	57.2 ± 2.6
Hungary	84.0 ± 1.6	92.8 ± 1.6	57.4 ± 2.9	24.7 ± 3.2	5.9 ± 1.3	41.1 ± 5.6	48.6 ± 4.9	37.7 ± 4.3
Eastern Europe								
Belarus	75.3 ± 2.0	90.1 ± 1.2	59.8 ± 2.2	13.5 ± 1.5	5.3 ± 0.9	77.1 ± 2.4	79.8 ± 3.0	69.5 ± 2.7
Russian Federation	76.4 ± 2.7	89.4 ± 1.0	62.4 ± 3.2	14.7 ± 1.4	9.6 ± 1.7	62.6 ± 4.5	64.0 ± 6.1	58.0 ± 4.8
Ukraine	70.1 ± 2.7	84.4 ± 2.1	62.4 ± 2.1	26.0 ± 2.2	10.1 ± 1.5	88.6 ± 1.6	86.7 ± 2.2	79.8 ± 2.7
Moldova	62.3 ± 2.9	96.7 ± 1.2	50.2 ± 2.6	11.3 ± 1.5	6.1 ± 1.3	79.7 ± 3.3	80.8 ± 3.3	80.9 ± 2.7
South-eastern Europe								
Slovenia	65.9 ± 2.5	89.0 ± 1.3	46.5 ± 2.3	20.1 ± 1.4	6.5 ± 1.4	48.4 ± 5.0	63.6 ± 4.7	47.1 ± 3.6
Croatia	94.9 ± 1.1	91.1 ± 1.0	59.6 ± 3.6	14.9 ± 1.9	5.3 ± 1.2	40.5 ± 5.6	55.3 ± 7.2	44.7 ± 5.5
Bosnia and Herzegovina	96.5 ± 0.7	91.4 ± 0.9	66.5 ± 1.9	19.5 ± 1.9	7.6 ± 1.1	50.7 ± 5.1	60.0 ± 5.1	54.9 ± 5.5
Republic of Serbia	97.7 ± 0.5	90.6 ± 1.1	70.8 ± 2.1	29.1 ± 1.7	22.2 ± 2.0	56.8 ± 2.8	64.1 ± 3.1	40.5 ± 3.8
Montenegro	96.1 ± 0.8	86.3 ± 1.5	65.5 ± 2.3	25.6 ± 2.3	21.6 ± 2.1	48.4 ± 3.6	54.4 ± 5.1	40.8 ± 4.4
FYR Macedonia	91.9 ± 1.3	80.2 ± 2.8	65.9 ± 3.5	31.8 ± 3.4	9.7 ± 1.9	52.0 ± 4.6	55.6 ± 3.8	44.6 ± 4.6
Bulgaria	67.7 ± 2.7	75.7 ± 2.6	75.5 ± 2.4	21.0 ± 2.3	7.2 ± 2.6	50.2 ± 5.7	62.2 ± 5.0	39.1 ± 4.5
Romania	90.4 ± 1.8	81.5 ± 2.6	63.7 ± 2.6	21.8 ± 5.6	11.5 ± 2.7	54.4 ± 4.4	61.6 ± 5.2	52.4 ± 4.5
Albania	84.8 ± 2.5	80.6 ± 2.4	46.3 ± 3.4	17.7 ± 1.4	9.9 ± 1.5	55.2 ± 4.0	65.7 ± 3.5	47.0 ± 4.7
Greece	89.8 ± 1.3	94.1 ± 0.8	68.2 ± 2.1	19.6 ± 1.4	16.7 ± 1.4	59.4 ± 2.6	64.7 ± 3.2	43.5 ± 4.3
Cyprus	86.8 ± 1.0	87.8 ± 0.9	55.8 ± 1.1	15.3 ± 1.4	14.6 ± 1.1	47.9 ± 2.2	48.6 ± 2.0	39.6 ± 2.3
Turkey	81.6 ± 0.9	85.9 ± 1.1	59.8 ± 1.2	10.1 ± 0.9	7.6 ± 0.6	40.1 ± 1.8	52.8 ± 1.9	21.1 ± 1.4
Caucasus								
Georgia	95.0 ± 0.8	93.8 ± 1.1	73.0 ± 2.4	27.8 ± 2.2	10.8 ± 1.9	10.0 ± 1.3	10.1 ± 2.6	11.0 ± 2.2
Armenia	89.8 ± 1.8	85.1 ± 3.0	67.8 ± 3.4	15.6 ± 3.4	4.0 ± 1.4	52.2 ± 4.9	31.1 ± 4.8	37.1 ± 5.2
Total	78.7	87.3	61.6	18.2	10.9	57.6	62.7	49.8

differences and consequently to increase of smoking attributable diseases among women as seen currently in Western Europe and North America.

Second, data on the factors that influence tobacco use showed high levels that must be addressed by the tobacco control programs in each country. Exposure to SHS has been shown to have adverse health effects on young people (US Department of Health and Human Services 2006). In addition, exposure to SHS can influence the behavior of young people in terms of smoking initiation (Andersen et al. 2002; Ellickson et al. 2001; Schneider et al. 2008). From the GYTS data, exposure to SHS at home was greater than 70% in all countries, except Latvia, Lithuania, Czech Republic, Moldova, and Slovenia. Exposure in public places was greater than 70% in all countries; and parental smoking was greater than 45% in every country. These findings suggest that acceptance of smoking is high throughout these 25 European countries, especially in the Southeastern region where levels of smoking at home exceed levels in public places. Exposure to SHS at home and in public has similar biological, psychological, and social effects on the community; however, very different enforcement challenges. Exposure outside the home can be effectively controlled by restrictive legislation, particularly the enforcement of smoking bans in public places. On the other hand, exposure to SHS at home can only be affected by the denormalization of tobacco use, through increasing the level of knowledge of the adverse effects of smoking and development of a social environment not tolerating smoking around non-smokers (Bal et al. 2001).

As the number of countries that have imposed bans on direct advertising has increased, the tobacco industry has increased "indirect advertising" methods such as: sponsoring sport events, putting their logos on promotional items, brand stretching, giving away free samples at events where young people concentrate, and sponsoring entertainment events (Framework Convention Alliance for Tobacco Control 2006). GYTS data show that between 10 and 30% of students in all 25 European countries had an object with a tobacco company logo on it and between 5 and 20% had been offered "free" cigarettes by a tobacco company representative. These numbers are rather high to be overlooked. Twenty of the 25 European countries included in this study have ratified the WHO FCTC (World Health Organization 2003). Article 13 of the WHO FCTC states: "Parties recognize that a comprehensive ban on advertising, promotion and sponsorship would reduce the consumption of tobacco products." The 20 countries that have ratified the WHO FCTC are required to "undertake a comprehensive ban on tobacco advertising, promotion and sponsorship within five years of ratification." Based on the GYTS data, despite of legislative restrictions of such forms of sales promotion of tobacco products in the most of European countries, a significant proportion of students reported these. Such discrepancy indicates that tobacco control legislation without proper enforcement, even looking progressive, has only limited effect on indirect tobacco advertisement.

Finally, having been taught about the dangers of tobacco use was less than 10% in Georgia but over 60% in the Eastern European countries. While teaching levels of greater than 60% are positive for tobacco control, it is important that in each country the Ministry of Health and Ministry of Education work together in order to meet the objectives of Article 12 of the WHO FCTC on education, communication, training and public awareness (World Health Organization 2003). A recent review of the effect of school-based tobacco prevention programs has shown that education programs will be most successful if they occur after other tobacco control policies are in place, such as, tax and price policies aimed at reducing tobacco consumption, 100% smoke free environments in all public places and workplaces, and a comprehensive ban on all tobacco advertising, promotion and sponsorship (Wiehe et al. 2005).

These findings suggest that in the 25 European countries included in this study, interventions shown to decrease tobacco use among youth (including increasing excise taxes, media campaigns, school programs in conjunction with community interventions, and community interventions that decrease minors' access to tobacco) must be broad-based and have components directed toward prevention and cessation. If effective programs are not developed and implemented soon throughout these 25 European countries, future morbidity, and mortality attributed to tobacco will surely increase.

The findings in this report are subject to at least two limitations. First, these data apply only to youths who were in school on the day of the survey and who completed the survey. Student response rates were above 80% in all countries except Romania, suggesting that bias attributable to absence or non-response is limited. Second, GYTS data are based on the self-report of students, who might underreport or over-report their behaviors or attitudes. The extent of this bias cannot be determined from these data; however, reliability studies in the United States have shown good test–retest results for similar tobacco-related questions (Brener et al. 2002).

Intensified efforts to lessen the current and projected harm caused by tobacco use among youth in the 25 European countries included in this study are urgently needed. These countries need to develop and implement comprehensive tobacco prevention and control programs that include public education campaigns, cessation-assistance programs, enforcement of existing tobacco restrictions, and related policy efforts to support tobacco control programs. The WHO FCTC (ratified by all countries except Czech Republic, Moldova, Croatia, Bosnia and

Herzegovina, and Russian Federation) provides a useful framework for implementing such a comprehensive approach. Full implementation of the principles and obligations contained in the WHO FCTC should begin to limit tobacco use, smoking initiation, and secondhand smoke exposure, and to promote cessation.

Key points

- Remarkable high prevalence of girls' smoking together with high occurrence of smoking susceptibility is a reason for concern and should be reflected in effective preventive measures.
- Very high prevalence of secondhand smoking suggests a high level of acceptance of smoking throughout the 25 European countries, particularly in Southeastern region.
- Despite of current legislative restrictions, a significant proportion of students reported indirect pro-tobacco advertisement, namely having an object with cigarette brand logo and being offered free cigarette samples.

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