

Theme Papers

Tobacco use by youth: a surveillance report from the Global Youth Tobacco Survey project

Charles W. Warren,¹ Leanne Riley,² Samira Asma,³ Michael P. Eriksen,⁴ Lawrence Green,⁵ Curtis Blanton,⁶ Cliff Loo,⁶ Scott Batchelor,⁶ & Derek Yach⁷

The Global Youth Tobacco Survey (GYTS) project was developed by the World Health Organization and the US Centers for Disease Control and Prevention to track tobacco use among youth in countries across the world, using a common methodology and core questionnaire. The GYTS is school based and employs a two-stage sample design to produce representative data on smoking among students aged 13–15 years. The first stage consists of a probabilistic selection of schools, and the second consists of a random selection of classes from the participating schools. All students in the selected classes are eligible for the survey.

In 1999, the GYTS was conducted in 13 countries and is currently in progress in over 30 countries. This report describes data from 12 countries: Barbados, China, Costa Rica, Fiji, Jordan, Poland, the Russian Federation (Moscow), South Africa, Sri Lanka, Ukraine (Kiev), Venezuela, and Zimbabwe. The findings show that tobacco use in the surveyed age group ranged from a high of 33% to a low of 10%. While the majority of current smokers wanted to stop smoking, very few were able to attend a cessation programme. In most countries the majority of young people reported seeing advertisements for cigarettes in media outlets, but anti-tobacco advertising was rare. The majority of young people reported being taught in school about the dangers of smoking. Environmental tobacco smoke exposure was very high in all countries. These results show that the GYTS surveillance system is enhancing the capacity of countries to design, implement, and evaluate tobacco prevention and control programmes.

Keywords: tobacco; smoking, epidemiology; tobacco use disorder, epidemiology; smoking cessation; adolescence; schools; data collection, methods; cluster analysis; questionnaires.

Voir page 875 le résumé en français. En la página 875 figura un resumen en español.

Introduction

Tobacco use is one of the chief preventable causes of death in the world. The World Health Organization (WHO) attributes some 4 million deaths a year to tobacco, a figure which is expected to rise to 8.4 million deaths a year by 2020 (1). By that time, 70% of these deaths will be occurring in the developing countries. Studies in the developed countries show that most people begin using tobacco before the age of 18 years (2, 3). Recent trends

indicate an earlier age of initiation and rising smoking prevalence rates among children and adolescents. If these patterns continue, tobacco use will result in the deaths of 250 million of the people who are children and adolescents today, many of them in the developing countries (4). In recent years, WHO (5), UNICEF (6), the Group of Eight (G8) Ministers of the Environment (7), the Ministers Responsible for Youth (8), and many national health agencies have called for concerted action against tobacco use by young people (9). Yet, information on tobacco use among young people is not available for most developing countries. To help fill in this data gap, WHO — through its Tobacco Free Initiative (TFI) — and the Office on Smoking and Health (OSH) in the Centers for Disease Control and Prevention (CDC) in the USA developed the Global Youth Tobacco Survey (GYTS), in consultation with countries in the six WHO regions. Assessing tobacco use by youth through the GYTS forms an important part of the global tobacco surveillance system.

This article describes the design and development of the GYTS, a project for international surveillance and comparisons of tobacco use, which is intended to enhance the capacity of countries to monitor tobacco use among youth, and to guide the

¹ Distinguished Fellow/Statistician, Office on Smoking and Health, Centers for Disease Control and Prevention (CDC), 1600 Clifton Road, Atlanta, GA 30333, USA (email wcw1@cdc.gov). Correspondence should be addressed to this author.

² Scientist, Tobacco Free Initiative, World Health Organization, Geneva, Switzerland.

³ Senior Service Fellow/Visiting Scientist, Office on Smoking and Health, CDC, Atlanta, GA, USA.

⁴ Director, Office on Smoking and Health, CDC, Atlanta, GA, USA.

⁵ Distinguished Fellow, Office on Smoking and Health, CDC, Atlanta, GA, USA.

⁶ Statistician, Office on Smoking and Health, CDC, Atlanta, GA, USA.

⁷ Executive Director, Noncommunicable Diseases and Mental Health, World Health Organization, Geneva, Switzerland.

implementation and evaluation of tobacco prevention and control programmes. Reported below are the early results of the GYTS obtained from 12 countries: Barbados, China, Costa Rica, Fiji, Jordan, Poland, the Russian Federation (Moscow), South Africa, Sri Lanka, Ukraine (Kiev), Venezuela and Zimbabwe.

Study design and methods

As one of the first steps, TFI and OSH worked with tobacco control experts from China, Fiji, Jordan, Sri Lanka, Ukraine (Kiev), Venezuela, and Zimbabwe to plan the design and implementation of an initial baseline assessment of tobacco use among youth in at least one country from each WHO region. The GYTS was thus created with the following design.

- The surveys in individual countries would be school-based because they are inexpensive, can be done in a short time frame, and require only limited field staff.
- The surveys would focus on school grades associated with students aged 13–15 years (at least 80% of young people in this age group are still either in regular schools or in vocational/technical schools).
- The questionnaire would have a “core” component which would provide essential data for comparisons between countries and regions, while allowing “optional” questions on specific issues according to the needs of individual countries. The GYTS core questions deal with tobacco use and related knowledge and attitudes, access to tobacco products, media and advertising exposure to tobacco, tobacco use as a subject in the school curriculum, smoking cessation, and environmental tobacco smoke. Most of the core questions were included in a “cognitive lab test” completed in 1999 (10) and, in addition, were pilot-tested in each country.

In the spring of 1999, the GYTS was conducted in Barbados, China, Jordan, the Russian Federation (Moscow), Sri Lanka, Ukraine (Kiev), and Venezuela. Subsequently, five other countries completed the survey — Costa Rica, Fiji, Poland, South Africa, and Zimbabwe. Representatives from eight more countries were trained in 1999 to implement their surveys in 2000 — Brazil, Chile, Colombia, Dominican Republic, India, Mexico, Philippines, and Singapore. Because of the demand, TFI and OSH are working to conduct surveys in an additional 20–30 countries in the year 2000. WHO and the CDC are thus committed to developing a global tobacco surveillance system with GYTS as one of the primary components.

Sampling methods

The GYTS school-based surveys employ two-stage cluster sample designs within each country, state or city (depending on the scope of the country’s survey). The first stage consists of sampling schools with probability of selection proportional to the school

enrolment size. The second stage consists of randomly selecting classes from the eligible grades within each chosen school. All students in the selected classes are eligible to participate in the survey.

A weighting factor was applied to each student record to adjust for non-responses and for the varying probabilities of selection. SUDAAN, a software package for statistical analysis of correlated data, was used to compute 95% confidence intervals (11). Differences between prevalence estimates were considered statistically significant if the 95% confidence intervals did not overlap.

Data collection

Survey coordinators were trained in groups of countries that were conducting the GYTS to ensure that the survey protocol and procedures for administration would be identical across the countries. Survey procedures were designed to protect the students’ privacy by allowing for anonymous and voluntary participation. The students completed the self-administered questionnaire in their classrooms, recording their responses directly on a machine-readable answer sheet. The core questionnaire contained 57 multiple-choice questions, with each country adding further questions to meet individual needs. Country-level parental permission procedures were followed before the survey was conducted.

Results

The results compare the extent of tobacco use among students aged 13–15 years across 12 countries. Gender-specific data are not shown in the Tables, but are reported in the text. School and student response rates for the GYTS were impressively high (Table 1). The school response rate ranged from 100% in Tianjin Province of China, Costa Rica, Ukraine (Kiev), and Zimbabwe to 76.9% in South Africa. The student response rate ranged from 99.7% in Venezuela to 81.4% in Ukraine (Kiev). The overall response rate (school rate \times student rate) ranged from 96.8% in Tianjin Province of China to 65.7% in South Africa.

Prevalence

Students who had ever smoked cigarettes ranged from a high of nearly 70% in Ukraine (Kiev), Poland (urban), and the Russian Federation (Moscow) to a low of approximately 15% in Shandong Province of China, and Sri Lanka (median: 24.2%) (Table 2). Boys were significantly more likely than girls to have ever smoked cigarettes, except in Barbados, Venezuela, and Zimbabwe.

Current cigarette smoking (i.e. had smoked on one or more days during the 30 days preceding the survey) showed a median of 8.7% and ranged from one-third of students (33%) in Ukraine (Kiev) and the Russian Federation (Moscow), nearly 30% in Poland (urban), nearly 20% in Costa Rica, Jordan,

Table 1. Study sample sizes and response rates among schools and students — Global Youth Tobacco Survey, 1999

Country	No. of schools in the sample	No. of schools participating	Response rate by schools (%)	No. of students selected	No. of students participating	Response rate by students (%)	Response rate: overall (%)
Barbados	19	18	94.7	1712	1647	96.2	91.1
China							
Chongqing	49	48	98.0	4096	3794	92.6	84.9
Guangqing	49	49	100	2989	2893	96.8	92.1
Shandong	48	45	93.8	2935	2882	98.2	90.7
Tianjin	49	44	89.8	2549	2409	94.5	96.8
Costa Rica	62	62	100	5114	4623	90.4	90.4
Fiji	51	44	86.3	1850	1629	88.1	75.9
Jordan	100	91	91.0	4244	3912	92.2	83.9
Poland							
urban	65	57	87.7	1875	1,567	83.6	73.3
rural	65	60	92.3	1980	1,642	82.9	76.5
Russian Federation							
Moscow	100	99	99.0	4755	4091	86.0	85.2
South Africa	160	123	76.9	7074	6,045	85.5	65.7
Sri Lanka	98	84	85.7	3253	2,896	89.0	76.3
Ukraine							
Kiev	100	100	100	5104	4156	81.4	81.4
Venezuela	103	96	93.2	3779	3767	99.7	92.9
Zimbabwe							
Harare	24	24	100	1080	896	83.0	83.0
Manicaland	33	33	100	1514	1358	89.7	89.7

Table 2. Percentage prevalence of tobacco use among students aged 13–15 years — Global Youth Tobacco Survey, 1999

Country	Smoked cigarettes, even one or two puffs	Current use ^a			Smoked cigarettes first before age of 10 years ^b
		Cigarettes	Other tobacco products	Any tobacco product	
Barbados	34.7 (± 6.1) ^c	10.8 (± 4.0)	9.0 (± 2.2)	16.9 (± 3.9)	25.0 (± 4.3)
China					
Chongqing	30.1 (± 3.8)	6.3 (± 1.5)	9.6 (± 1.4)	14.6 (± 2.3)	39.2 (± 5.1)
Guandong	21.6 (± 1.7)	4.5 (± 1.0)	6.7 (± 1.0)	10.3 (± 1.2)	37.7 (± 4.9)
Shandong	16.2 (± 4.0)	2.4 (± 0.9)	6.9 (± 1.6)	8.6 (± 1.7)	20.5 (± 7.7)
Tianjin	21.6 (± 2.5)	5.7 (± 1.6)	4.9 (± 1.1)	9.7 (± 1.7)	27.3 (± 3.8)
Costa Rica	44.4 (± 2.8)	17.8 (± 2.1)	6.4 (± 0.9)	20.8 (± 2.0)	10.9 (± 1.5)
Fiji	32.8 (± 5.6)	10.4 (± 3.4)	7.9 (± 2.2)	15.1 (± 3.8)	21.6 (± 5.0)
Jordan	34.3 (± 4.0)	16.6 (± 2.9)	11.2 (± 2.2)	20.6 (± 3.2)	26.1 (± 3.5)
Poland					
urban	69.8 (± 3.3)	29.3 (± 3.9)	13.1 (± 2.7)	34.1 (± 3.8)	26.6 (± 3.3)
rural	58.7 (± 4.2)	16.9 (± 2.5)	6.2 (± 1.4)	20.0 (± 2.6)	37.3 (± 3.8)
Russian Federation					
Moscow	67.2 (± 2.7)	33.4 (± 2.8)	10.7 (± 1.3)	35.1 (± 2.5)	22.0 (± 1.9)
South Africa	44.2 (± 6.0)	17.6 (± 2.5)	11.8 (± 3.4)	24.3 (± 3.0)	19.9 (± 3.2)
Sri Lanka	12.1 (± 2.9)	4.0 (± 1.4)	7.2 (± 1.1)	9.9 (± 1.5)	25.4 (± 8.7)
Ukraine					
Kiev	73.6 (± 2.7)	33.9 (± 3.1)	6.8 (± 1.2)	34.6 (± 2.9)	26.6 (± 2.5)
Venezuela	21.9 (± 3.2)	7.4 (± 1.7)	8.7 (± 1.5)	14.8 (± 2.3)	12.1 (± 3.7)
Zimbabwe					
Harare	26.5 (± 5.6)	10.7 (± 3.4)	9.5 (± 3.4)	18.0 (± 5.0)	27.3 (± 7.2)
Manicaland	20.4 (± 4.7)	10.0 (± 3.7)	13.2 (± 4.5)	18.5 (± 4.9)	31.2 (± 12.8)

^a Smoked cigarettes or used other tobacco products on ≥ 1 of the 30 days preceding the survey.

^b First whole cigarette.

^c Figures in parentheses are 95% confidence intervals.

Poland (rural), and South Africa, to 10% or less in the other countries (Table 2). Boys in China, Jordan, the Russian Federation (Moscow), Sri Lanka, and Ukraine (Kiev) were significantly more likely than girls to smoke cigarettes currently.

With a median of 8.9%, current use of tobacco products other than cigarettes ranged from approximately 10% in Barbados, Chongqing Province of China, Jordan, Poland (urban), the Russian Federation (Moscow), South Africa, Venezuela, and Zimbabwe, 7% in Guangdong and Shandong Provinces of China, Costa Rica, Fiji, Poland (rural), Ukraine (Kiev), and Sri Lanka, to less than 5% in Tianjin Province of China (Table 2). Boys in Fiji, Jordan, the Russian Federation (Moscow), Sri Lanka, and Ukraine (Kiev) were significantly more likely than girls to use other tobacco products.

Current use of any tobacco product (cigarette smoking or use of other tobacco products) had a median of 15.9% and ranged from a high of 35% in the Russian Federation (Moscow), Ukraine (Kiev), and Poland (urban), 15–20% in Barbados, Chongqing Province of China, Costa Rica, Jordan, Poland (rural), South Africa, Venezuela, and Zimbabwe, to less than 10% in Guangdong, Shandong, and Tianjin Provinces of China, and Sri Lanka (Table 2). Boys in China, Fiji, Jordan, the Russian Federation (Moscow), and Sri Lanka were significantly more likely than girls to currently use any tobacco product.

The highest prevalence of early initiation of cigarette smoking was in Chongqing and Guangdong Provinces of China, Poland (rural), and Manicaland in Zimbabwe, where nearly one-third (33%) of the students who ever smoked cigarettes started smoking before the age of 10 years (Table 2). The median for all countries was 26.4%. Over one-fifth of 13–15-year-old students began smoking before 10 years in Barbados, Fiji, Jordan, Poland (rural), Shandong and Tianjin Provinces of China, the Russian Federation (Moscow), South Africa, Sri Lanka, Ukraine (Kiev), and Zimbabwe (Harare). Initiation of smoking before 10 years was lowest in Venezuela (12.1%) and Costa Rica (10.9%). In the Russian Federation (Moscow) and Ukraine (Kiev), boys were significantly more likely than girls to begin smoking before 10 years of age.

Access

Students who currently smoke were asked where they usually smoked (Table 3). In their home was the most likely location for smoking among students in Barbados and China (over 40%), followed by Jordan (33%), and Venezuela and Zimbabwe (over 25%) (median: 30.5%). In the Russian Federation (Moscow), Sri Lanka, and Ukraine (Kiev), public places were identified as the most likely place where students smoked. In Poland (urban and rural), “social events” were identified as the most likely venue where the students smoked. Girls in China, Fiji, Jordan, and Venezuela were significantly more likely than boys to smoke at home.

Table 3. Percentage of students aged 13–15 years who usually smoked cigarettes at home and bought them in a store — Global Youth Tobacco Survey, 1999

Country	Smokes usually at home (%)	Cigarettes bought in a store (%)	Cigarettes not refused in a store because of being under-age (%)
Barbados	41.2 (± 7.5) ^a	18.1 (± 8.4)	70.6 (± 9.1)
China			
Chongqing	49.6 (± 11.2)	33.7 (± 9.8)	73.1 (± 10.3)
Guandong	41.0 (± 11.3)	52.8 (± 10.2)	92.1 (± 4.2)
Shandong	43.4 (± 6.8)	14.1 (± 8.8)	75.2 (± 14.5)
Tianjin	56.5 (± 8.1)	32.9 (± 13.6)	87.5 (± 5.2)
Costa Rica	16.9 (± 3.3)	31.7 (± 4.8)	61.0 (± 5.5)
Fiji	14.5 (± 7.2)	34.7 (± 9.2)	69.0 (± 5.4)
Jordan	33.1 (± 9.1)	33.8 (± 7.5)	67.9 (± 7.5)
Poland			
urban	8.7 (± 2.7)	53.4 (± 4.5)	67.8 (± 5.2)
rural	10.6 (± 4.4)	38.5 (± 6.4)	62.2 (± 5.5)
Russian Federation			
Moscow	4.8 (± 1.3)	62.8 (± 3.7)	78.5 (± 3.9)
South Africa	18.8 (± 4.2)	54.8 (± 6.8)	65.4 (± 8.1)
Sri Lanka	10.0 (± 5.4)	42.1 (± 17.7)	40.7 (± 8.2)
Ukraine			
Kiev	6.7 (± 1.9)	38.5 (± 4.1)	90.9 (± 2.3)
Venezuela	27.8 (± 6.7)	46.2 (± 9.0)	77.0 (± 7.0)
Zimbabwe			
Harare	25.2 (± 12.2)	47.6 (± 8.4)	75.3 (± 7.7)
Manicaland	26.0 (± 10.7)	37.7 (± 13.3)	58.6 (± 15.1)

^a Figures in parentheses are 95% confidence intervals.

In every country, the most likely means of obtaining cigarettes by students who currently smoke was to purchase them in a store (Table 3). Nearly two-thirds of the surveyed students in the Russian Federation (Moscow) purchased cigarettes in a store, compared with about one-half in Guangdong Province of China, Poland (urban), South Africa, Venezuela, and Harare in Zimbabwe (median: 38.5%). Between 30% and 40% of students purchased their cigarettes in a store in Chongqing and Tianjin Provinces of China, Costa Rica, Fiji, Jordan, Poland (rural), Sri Lanka, Ukraine (Kiev), and Manicaland in Zimbabwe; and less than 20% in Barbados and Shandong Province of China. In every country, except for Sri Lanka, the majority of students who currently smoke and buy their cigarettes in a store were not refused their purchase because they were under age (median: 75.3%) (Table 3).

Cessation

The core questionnaire asked current smokers if they wanted to stop smoking cigarettes now (Table 4). In every country, except Barbados and Jordan, over one-half of the surveyed 13–15-year-old smokers expressed a desire to stop smoking now (median: 68.0%). The desire to stop smoking was especially high (near 90%) in Shandong and Tianjin Provinces of China where many of the students started smoking at an early age. The desire to stop smoking was similar

Table 4. **Percentage of students aged 13–15 years who wanted to stop and unsuccessfully tried to stop cigarette smoking — Global Youth Tobacco Survey, 1999**

Country	Desire to stop	Tried to stop
Barbados	43.4 (± 15.3) ^a	63.5 (± 6.6)
China		
Chongqing	72.4 (± 6.8)	63.2 (± 12.6)
Guandong	62.5 (± 12.8)	62.6 (± 10.6)
Shandong	86.9 (± 13.6)	78.8 (± 15.3)
Tianjin	86.9 (± 6.3)	68.2 (± 8.4)
Costa Rica	57.8 (± 5.3)	63.0 (± 5.3)
Fiji	78.0 (± 8.3)	78.9 (± 12.0)
Jordan	40.4 (± 5.9)	78.3 (± 5.7)
Poland		
urban	74.6 (± 5.7)	73.3 (± 3.8)
rural	79.5 (± 4.4)	79.1 (± 6.6)
Russian Federation		
Moscow	69.2 (± 3.7)	76.1 (± 3.0)
South Africa	69.1 (± 7.3)	74.6 (± 5.5)
Sri Lanka	79.0 (± 13.6)	42.9 (± 15.4)
Ukraine		
Kiev	51.3 (± 3.1)	56.4 (± 4.0)
Venezuela	69.8 (± 10.8)	68.4 (± 10.7)
Zimbabwe		
Harare	66.7 (± 17.7)	43.4 (± 20.0)
Manicaland	64.6 (± 8.9)	54.0 (± 19.3)

^a Figures in parentheses are 95% confidence intervals.

for boys and girls in every country, except Ukraine (Kiev) where more boys than girls wanted to stop. In every country, except Sri Lanka, Ukraine (Kiev), and Zimbabwe, approximately two-thirds of current smokers had tried to stop smoking during the 12 months preceding the survey (median: 63.4%) (Table 4).

Media and advertising

Anti-tobacco messages were not widely seen by students in these countries either as media messages or at sporting or other events during the 30 days preceding the survey (Table 5). In most countries, only 20–25% of students had seen an anti-smoking message during the 30 days preceding the survey (median: 19.2% for media and 25.6% at sports events). In contrast, in most countries, over two-thirds of students saw advertisements promoting cigarettes on billboards (median: 69.3%), in newspapers and magazines (median: 67.9%), and at public events (median: 67.7%), or saw cigarette brand names at such events (median: 78.3%).

In Fiji, Jordan, Poland (urban and rural), the Russian Federation (Moscow), and Ukraine (Kiev), over one in five students owned an object with a cigarette brand logo on it (median: 14.0%) (Table 5). In the other countries, less than 15% of students had a brand logo item. The percentage of students who reported that they had been offered free cigarettes by a representative of a tobacco company was relatively high, with a median of 7.2% (Table 5). This practice

was most likely in Jordan (24.8%), the Russian Federation (Moscow) (16.7%), South Africa (15.2%), and in Manicaland in Zimbabwe (14.5%).

Environmental tobacco smoke

The percentage of students who lived in a home where others smoked ranged from over 67% in Jordan and Poland (urban and rural), to 22.5% in Barbados (median 49.0%) (Table 6). In China, Fiji, the Russian Federation (Moscow), Sri Lanka, and Ukraine (Kiev), approximately one-half of the students were exposed to cigarette smoking from others in their home. In South Africa and Venezuela, over 40% of students were exposed to other people smoking at home. In every country, at least 40% of students were exposed to cigarette smoking by other people in places away from their homes (median: 56.5%) (Table 6). Boys in China, Fiji, Jordan, Sri Lanka, and Ukraine (Kiev) were more likely than girls to be exposed to smoke from others.

In the Russian Federation (Moscow), South Africa, Ukraine (Kiev), and Zimbabwe, only approximately one-half of the students “definitely” thought that smoke from others was harmful to them (Table 6). In all the other countries, over two-thirds of the students thought smoke from others was harmful to them (median: 69.7%). Except in Zimbabwe, the majority of students thought that smoking should be banned from public places (median: 67.8%). Approximately 9 out of 10 students in Costa Rica (84.2%), Sri Lanka (91.4%) and Venezuela (87.3%) thought that smoking should be banned in public places.

School curriculum

The percentage of students who reported having been taught in school about the dangers of tobacco use varied from over 70% in China to approximately 33% in Barbados, Costa Rica, the Russian Federation (Moscow), South Africa, and Harare in Zimbabwe (median: 53.5%) (Table 7). Those who reported having been taught the “reasons not to smoke” or were taught about the “effects of tobacco use” was much lower. Overall, less than one-half of the students reported having been taught about the effects of tobacco use (median: 35.2%).

Discussion

The GYTS was initiated by WHO and CDC as a means of providing baseline data to selected countries participating in a project on youth and tobacco funded by the United Nations Foundation for International Partnerships (UNFIP) project on youth and tobacco.

The findings of the GYTS in these countries and the growing need for data on youth and tobacco led other countries to ask for assistance in conducting their own surveys. WHO and CDC are therefore now

Table 5. Percentage of students aged 13–15 years who were exposed to anti- and pro-smoking advertising — Global Youth Tobacco Survey, 1999

Country	Saw anti-smoking messages on the media (%)	Saw anti-smoking messages at sporting and other events (%)	Saw ads for cigarettes on billboards (%)	Saw ads for cigarettes in newspapers/magazines (%)	Saw brand names at a sports events or on TV (%)	Saw ads for cigarettes at sports event (%)	Had some object with a cigarette brand logo on it (%)	Cigarettes offered free by tobacco company (%)
Barbados	22.8 (± 2.3) ^a	47.0 (± 4.3)	69.3 (± 3.6)	69.1 (± 3.9)	86.5 (± 2.0)	48.9 (± 3.7)	14.7 (± 2.2)	7.3 (± 1.6)
China								
Chongqing	17.7 (± 2.5)	19.5 (± 2.3)	67.5 (± 3.7)	44.7 (± 2.9)	57.7 (± 2.5)	63.9 (± 3.3)	12.2 (± 1.6)	7.0 (± 1.3)
Guandong	13.4 (± 1.7)	9.5 (± 1.2)	75.7 (± 2.0)	48.6 (± 2.9)	67.0 (± 1.8)	71.5 (± 2.9)	18.9 (± 2.0)	5.3 (± 1.2)
Shandong	18.6 (± 2.7)	19.2 (± 2.5)	50.3 (± 2.2)	31.6 (± 2.4)	45.6 (± 3.1)	44.3 (± 2.3)	7.4 (± 1.1)	2.5 (± 1.2)
Tianjin	12.8 (± 1.6)	15.5 (± 2.0)	60.4 (± 4.4)	35.1 (± 3.8)	46.8 (± 3.1)	48.4 (± 2.8)	6.7 (± 1.3)	2.5 (± 1.1)
Costa Rica	25.2 (± 1.3)	50.4 (± 2.4)	91.9 (± 1.4)	85.5 (± 1.7)	92.3 (± 1.1)	NA	13.1 (± 1.3)	7.2 (± 1.0)
Fiji	12.5 (± 3.7)	16.5 (± 2.6)	78.3 (± 3.1)	81.2 (± 3.7)	93.2 (± 1.9)	84.2 (± 3.5)	20.5 (± 2.6)	10.8 (± 2.5)
Jordan	19.1 (± 2.1)	25.2 (± 3.1)	64.6 (± 2.5)	59.1 (± 2.3)	72.3 (± 2.2)	63.0 (± 3.2)	30.5 (± 2.5)	24.8 (± 2.9)
Poland								
urban	35.4 (± 2.7)	18.0 (± 2.2)	89.3 (± 2.8)	91.0 (± 3.5)	87.6 (± 2.9)	82.8 (± 1.9)	30.0 (± 2.0)	NA
rural	42.5 (± 1.4)	20.5 (± 3.1)	83.9 (± 3.2)	89.1 (± 3.1)	88.0 (± 3.4)	79.1 (± 2.8)	20.5 (± 1.9)	NA
Russian Federation								
Moscow	25.2 (± 1.7)	41.2 (± 2.7)	94.9 (± 0.8)	77.0 (± 1.5)	89.5 (± 1.3)	79.3 (± 1.5)	22.9 (± 1.9)	16.7 (± 1.9)
South Africa	20.2 (± 2.8)	22.4 (± 3.7)	76.4 (± 4.6)	80.7 (± 3.9)	83.8 (± 3.6)	78.3 (± 5.3)	14.5 (± 3.0)	15.2 (± 4.4)
Sri Lanka	9.6 (± 1.7)	15.0 (± 2.3)	81.0 (± 2.1)	83.4 (± 1.9)	87.0 (± 2.4)	84.8 (± 2.2)	10.5 (± 1.7)	6.4 (± 1.1)
Ukraine								
Kiev	21.2 (± 2.0)	26.0 (± 1.9)	NA	87.8 (± 1.3)	90.9 (± 1.1)	83.8 (± 1.6)	25.0 (± 1.7)	6.6 (± 1.0)
Venezuela	19.7 (± 2.2)	27.8 (± 2.6)	80.2 (± 2.0)	80.4 (± 2.0)	81.0 (± 2.4)	76.3 (± 2.5)	14.9 (± 1.9)	10.2 (± 1.1)
Zimbabwe								
Harare	19.3 (± 3.6)	26.7 (± 4.9)	76.6 (± 5.3)	74.7 (± 4.9)	83.3 (± 3.7)	74.1 (± 5.8)	10.0 (± 1.7)	8.7 (± 3.7)
Manicaland	30.3 (± 6.1)	36.2 (± 6.6)	64.6 (± 5.1)	66.7 (± 4.0)	75.5 (± 5.7)	62.2 (± 6.2)	13.2 (± 2.6)	14.5 (± 3.4)

NA - Not available, question was not asked.

^a Figures in parentheses are 95% confidence intervals.

mounting a multi-agency, international collaborative effort to provide this assistance.

The data available on tobacco use by youth and related problems is weak, except in a few developed countries. Global monitoring of the tobacco epidemic and comparisons between countries require a degree of standardization of core concepts and definitions, and of the methodology of data collection. Until now, no survey instrument had been designed or consistently applied to meet these conditions. The GYTS has several strengths in this regard: it is both standardized and adaptable to the needs of each country; it is relatively simple and inexpensive to administer; and the data gathered are processed and returned to countries within a short time-frame.

The GYTS surveillance system will also enhance the capacity of countries to design, implement, and evaluate their own tobacco control and prevention programmes by following a standard format. It offers a unique tool for improving the information base on tobacco use among young people, which will support medium-term and long-term programming and advocacy actions for youth-targeted tobacco control. The GYTS will serve in evaluating the success of national programmes and the WHO Framework Convention for Tobacco

Control (FCTC) (12), especially in the protection of children and adolescents.

Conclusions

- The percentage of young people using any tobacco product ranges from a high of 33% to a low of about 10%. Cigarette use is extremely high in two Eastern European urban areas — Moscow and Kiev, where more than one-third of young people aged between 13 and 15 years currently smoke cigarettes. This high prevalence in such a young age group portends a lifetime of addiction for a large number of people, half of whom will die prematurely of tobacco-related diseases.
- In most countries, boys are more likely than girls to use tobacco. Where this tendency is reversed, we may be witnessing the success of advertising by the tobacco industry in making cigarettes fashionable.
- One-fifth or more of young people begin smoking cigarettes before the age of 10 years. This is of concern, since the younger they start to smoke, the more likely they are to become addicted, or become heavy smokers, or die from tobacco-related diseases.

Table 6. **Percentage of students aged 13–15 years who were exposed to tobacco smoke in the home and other places — Global Youth Tobacco Survey, 1999**

Country	% of others who smoke in the student's home	% exposed to smoke from persons in other places	% who definitely think smoke from others is harmful to them	% who think smoking should be banned in public places
Barbados	22.5 (± 4.8) ^a	51.3 (± 3.9)	63.7 (± 4.1)	79.4 (± 2.6)
China				
Chongqing	56.8 (± 3.7)	59.6 (± 3.2)	81.3 (± 1.6)	55.7 (± 2.7)
Guandong	49.4 (± 2.8)	48.4 (± 2.8)	80.2 (± 1.7)	64.3 (± 2.1)
Shandong	48.9 (± 3.8)	42.9 (± 2.7)	79.6 (± 2.6)	63.1 (± 2.1)
Tianjin	59.1 (± 3.1)	52.6 (± 3.2)	81.4 (± 1.8)	68.7 (± 2.3)
Costa Rica	32.8 (± 1.7)	55.7 (± 2.1)	73.5 (± 1.9)	84.2 (± 1.8)
Fiji	49.4 (± 4.8)	68.6 (± 3.4)	57.2 (± 5.4)	54.0 (± 8.2)
Jordan	67.4 (± 2.4)	61.3 (± 2.9)	75.0 (± 2.3)	78.3 (± 2.1)
Poland				
urban	68.6 (± 2.4)	72.1 (± 3.0)	66.2 (± 2.0)	76.5 (± 2.0)
rural	67.9 (± 3.1)	62.3 (± 2.9)	61.8 (± 3.1)	84.6 (± 2.8)
Russian Federation				
Moscow	55.3 (± 2.2)	72.5 (± 2.1)	51.0 (± 2.6)	71.0 (± 2.1)
South Africa	43.6 (± 4.6)	56.1 (± 8.0)	57.3 (± 7.5)	53.4 (± 9.1)
Sri Lanka	55.9 (± 3.4)	67.9 (± 3.3)	74.7 (± 2.5)	91.4 (± 2.4)
Ukraine				
Kiev	49.0 (± 2.4)	71.8 (± 1.8)	49.4 (± 2.6)	66.9 (± 2.7)
Venezuela	43.5 (± 2.2)	47.8 (± 2.9)	64.6 (± 2.4)	87.3 (± 1.5)
Zimbabwe				
Harare	36.2 (± 5.0)	62.4 (± 5.0)	45.3 (± 6.2)	43.2 (± 11.1)
Manicaland	35.0 (± 6.0)	51.6 (± 6.4)	31.0 (± 6.3)	31.6 (± 8.1)

^a Figures in parentheses are 95% confidence limits.

Table 7. **Percentage of students aged 13–15 years who were taught the facts about tobacco smoking during the past school year — Global Youth Tobacco Survey, 1999**

Country	Dangers of smoking taught in class (%)	Reasons for not smoking discussed in class (%)	Effects of tobacco use taught in class (%)
Barbados	32.0 (± 8.7) ^a	22.8 (± 4.6)	29.2 (± 8.9)
China			
Chongqing	78.6 (± 2.8)	39.8 (± 3.4)	48.0 (± 3.4)
Guandong	83.0 (± 3.1)	35.5 (± 2.7)	57.3 (± 2.9)
Shandong	71.7 (± 2.6)	35.5 (± 3.4)	41.3 (± 3.7)
Tianjin	75.9 (± 3.4)	35.4 (± 2.9)	43.2 (± 3.8)
Costa Rica	39.4 (± 3.8)	32.9 (± 3.1)	37.8 (± 3.1)
Fiji	64.1 (± 5.7)	44.8 (± 5.6)	56.1 (± 6.1)
Jordan	52.5 (± 3.9)	49.2 (± 2.8)	49.7 (± 2.7)
Poland			
urban	48.3 (± 4.1)	42.5 (± 3.4)	39.2 (± 3.2)
rural	53.4 (± 3.7)	44.8 (± 4.3)	41.5 (± 4.1)
Russian Federation			
Moscow	35.6 (± 4.0)	23.0 (± 2.6)	32.3 (± 3.5)
South Africa	38.7 (± 4.8)	29.4 (± 4.3)	41.7 (± 4.3)
Sri Lanka	62.7 (± 3.2)	34.5 (± 2.7)	53.8 (± 2.9)
Ukraine			
Kiev	54.4 (± 5.1)	37.8 (± 4.8)	48.0 (± 4.2)
Venezuela	42.1 (± 5.0)	30.3 (± 2.7)	49.8 (± 4.7)
Zimbabwe			
Harare	34.1 (± 5.9)	26.7 (± 5.7)	33.3 (± 6.2)
Manicaland	51.6 (± 5.7)	34.9 (± 5.5)	50.8 (± 5.1)

^a Figures in parentheses are 95% confidence limits.

- Young people usually smoke at home — except in Moscow and Kiev where there is no restriction on smoking. Smoking in the home adds to the burden of secondary exposure of other persons and provides an unfortunate role model for younger siblings.
- Young people who wish to buy cigarettes in stores are very rarely refused purchase if they are under age. Even where laws exist which restrict the sale of cigarettes to young people, these laws are seldom enforced.
- The majority of young people currently smoking want to stop smoking and over two-thirds have tried to stop. The traditional focus of youth prevention programmes has been on preventing the start of tobacco use. Few have offered cessation programmes to those who may already be smoking. Programmes and interventions targeting young people therefore need to expand their focus to include both preventing starting and offering tailored youth cessation programmes.
- Across the countries, anti-tobacco advertising is rare. Conversely, in most countries the majority of young people report having seen advertisements for cigarettes from a variety of media outlets (billboards, newspapers, magazines, etc.). Thus, the influence of advertising by the tobacco industry is pronounced in most populations. Until legislation provides for labelling of tobacco products and support for counter-advertising, children and adolescents are seeing and hearing only pro-tobacco messages in the media.
- On the other hand, in most countries the majority of young people have been taught in school about the dangers of smoking. The present survey does not provide details about the content or quality of the curriculum, the preparation of the teachers on this topic, or the number or duration of the lessons taught.
- Exposure of young people to environmental tobacco smoke is very high in all countries. The majority of young people definitely think that smoke from others is harmful to them. Also, the majority of young people feel smoking should be banned from public places. The environment in which most young people live therefore is contrary to their desire for freedom from exposure to tobacco smoke. ■

Acknowledgements

The agencies contributing to the surveys, besides those within each country, included the United Nations Foundation for International Partnerships (UNFIP), the United Nations Children's Fund (UNICEF), the US National Cancer Institute (NCI), and the Canadian Public Health Association (CPHA).

The Research Coordinators in the 12 countries described in the present study were A. Daniels (Barbados), Jiang-ping Sun (China), M. Shreim (Jordan), P.W. Gunasekera (Sri Lanka), K. Krasovsky

(Kiev, Ukraine), R. Granero (Venezuela), K.V. Vyshinsky (Moscow, Russian Federation), I. Movono (Fiji), K. Przewozniak (Poland), D. Swart (South Africa), J. Bejarano (Costa Rica), and the Blair Research Group (Zimbabwe). Special support for

the GYTS was also provided by the following A. Demine (Moscow, Russian Federation), N. Herrera (Venezuela), P. Reddy (South Africa), and W. Zatonski (Poland).

Résumé

Le tabac chez les jeunes : surveillance du projet d'enquête mondiale sur le tabagisme chez les jeunes

Le tabagisme est l'une des principales causes de décès évitables dans le monde. L'Organisation mondiale de la Santé lui attribue près de 4 millions de décès par an, un chiffre qui devrait passer à 8,4 millions d'ici 2020. A ce moment-là, 70 % de ces décès se produiront dans les pays en développement. La plupart des gens commencent à fumer avant l'âge de 18 ans. Les tendances observées récemment vont dans le sens d'un accroissement des taux de prévalence du tabagisme chez les enfants et les adolescents, qui commencent à fumer plus tôt.

L'enquête mondiale sur le tabagisme chez les jeunes a été élaborée par l'initiative Pour un monde sans tabac de l'OMS et par l'Office on Smoking and Health des Centers for Disease Control and Prevention (CDC) des Etats-Unis d'Amérique, afin d'analyser le tabagisme chez les jeunes de pays du monde entier au moyen d'une méthodologie et d'un questionnaire de base communs. Cette enquête est réalisée dans les écoles et fait appel à un échantillonnage à deux degrés, afin d'obtenir des données représentatives de ce qu'est le tabagisme chez des élèves de 13 à 15 ans. Dans un premier temps, on réalise un choix probabiliste des écoles et, dans un second temps, on choisit de façon aléatoire les classes dans lesquelles on va enquêter au sein des écoles participantes. Tous les élèves des classes choisies peuvent participer à l'enquête.

Cet article décrit le principe et la mise au point de cette enquête et rapporte les résultats obtenus dans 12 pays : Afrique du Sud, Barbade, Chine, Costa Rica,

Fédération de Russie (Moscou), Fidji, Jordanie, Pologne, Sri Lanka, Ukraine (Kiev), Venezuela et Zimbabwe. Les résultats montrent que le tabagisme chez les jeunes s'étagé entre un maximum de 33 % et un minimum de 10 %. La plupart des fumeurs actuels souhaitent arrêter de fumer, mais très peu d'entre eux ont déjà suivi un programme pour y parvenir. Dans la plupart des pays, la majorité des jeunes indiquent avoir vu des publicités pour les cigarettes dans les médias. La publicité antitabac est rare, mais la majorité des jeunes ont appris à l'école quels étaient les dangers du tabac. L'exposition au tabagisme ambiant est très importante dans tous les pays.

Les résultats de l'enquête réalisée dans ces 12 pays et la nécessité croissante de disposer de données sur le tabac chez les jeunes ont conduit d'autres pays à demander de l'aide pour effectuer leurs propres enquêtes. L'OMS/TFI et les CDC sont donc maintenant en train de mettre en place avec plusieurs autres organisations un important effort international concerté pour fournir cette aide.

Le système de surveillance de ce type d'enquête vise à renforcer la capacité des pays à concevoir, à mettre en œuvre et à évaluer des programmes de prévention et de lutte antitabac en suivant un modèle commun/standard. Ce type d'enquête constitue donc un moyen important d'évaluer les succès remportés par les programmes nationaux et la convention-cadre OMS pour la lutte antitabac récemment lancée, surtout pour ce qui est protéger les enfants et les adolescents.

Resumen

El consumo de tabaco entre los jóvenes: informe de vigilancia de la Encuesta Mundial sobre el Tabaco y los Jóvenes

El consumo de tabaco es una de las principales causas prevenibles de defunción en el mundo. La Organización Mundial de la Salud (OMS) atribuye al tabaco unos 4 millones de defunciones anuales, cifra que según las previsiones habrá aumentado a 8,4 millones anuales para 2020. En esa fecha el 70% de tales defunciones se producirán en los países en desarrollo. La mayor parte de la gente empieza a consumir tabaco antes de los 18 años. Las últimas tendencias muestran un aumento de las tasas de prevalencia de tabaquismo entre los niños y adolescentes y un comienzo más precoz del hábito.

La Encuesta Mundial sobre el Tabaco y los Jóvenes (GYTS) fue desarrollada por la Iniciativa «Liberarse del tabaco» (ILT) de la OMS y por la Oficina de Tabaco y

Salud de los Centros de Control y Prevención de Enfermedades de los Estados Unidos (CDC), a fin de analizar la evolución del consumo del tabaco entre los jóvenes en países de todo el mundo, usando para ello una metodología común y un cuestionario básico. La GYTS es una encuesta escolar que emplea un método de muestreo en dos etapas para obtener datos representativos sobre el hábito de fumar entre los alumnos de 13 a 15 años de edad. En la primera fase se hace una selección probabilista de las escuelas, y en la segunda se seleccionan aleatoriamente clases de las escuelas participantes. Todos los estudiantes de las clases seleccionadas son incluíbles en la encuesta.

En el presente artículo se describen el diseño y el desarrollo de la GYTS y se notifican los resultados de las

encuestas llevadas a cabo en 12 países: Barbados, China, Costa Rica, Federación de Rusia (Moscú), Fiji, Jordania, Polonia, Sri Lanka, Sudáfrica, Ucrania (Kiev), Venezuela y Zimbabwe. Los resultados muestran que el consumo de tabaco se sitúa entre un máximo del 33% y un mínimo del 10%. La mayoría de los fumadores actuales desean dejar de fumar, pero son muy pocos los que han asistido en alguna ocasión a un programa de deshabituación. En la mayoría de los países la mayor parte de los jóvenes declaran que han visto anuncios de cigarrillos en los medios de comunicación. La publicidad contra el tabaco rara vez se menciona, pero a la mayoría de los jóvenes se les ha informado en la escuela sobre los peligros del hábito de fumar. La exposición a humo de tabaco ambiental era muy elevada en todos los países.

Los resultados obtenidos por la GYTS en estos 12 países y la creciente necesidad de datos sobre la juventud y el tabaco ha llevado a otros países a pedir ayuda para realizar sus propias encuestas. En consecuencia, OMS/ILT y los CDC están impulsando una energética iniciativa de colaboración internacional multiorganismos para proporcionar esa ayuda.

El sistema de vigilancia de la GYTS tiene como objetivo aumentar la capacidad de los países para diseñar, aplicar y evaluar programas de prevención y control del tabaquismo con arreglo a un formato común/estándar. La GYTS constituye por tanto un instrumento importante para evaluar el éxito de los programas nacionales y del recientemente iniciado Convenio Marco de la OMS para la Lucha Antitabáquica, sobre todo en lo que respecta a proteger a los niños y los adolescentes.

References

1. **Murray CGL, Lopez AD** Alternative projections of mortality and disease by cause, 1990–2020: global burden of disease study. *Lancet*, 1997, **349**: 1498–1504.
2. **US Department of Health and Human Services.** *Preventing tobacco use among young people: a report of the Surgeon General*. Atlanta, GA, US 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 of Smoking and Health, 1994. Reprinted with corrections, July 1994.
3. **Secretary of State for Health and Secretaries of State for Scotland, Wales and Northern Ireland.** *Smoking kills. A White Paper on tobacco*, 30 November 1999. London, H.M. Stationery Office, 1999.
4. **Peto R et al.** Developing populations: the future health effects of current smoking patterns. In: *Mortality from smoking in developed countries, 1950–2000*. Oxford, Oxford University Press, 1994: A101–103.
5. **Brundtland GH.** Paediatricians enlisted in fight against childhood killers. *WHO Press Release*, No. 59, August 1998.
6. **Bellamy C.** Tobacco undermines child rights, UNICEF says. Marketing World No-Tobacco Day calls for concerted global action. Press release, New York, UNICEF, May 1998.
7. *Declaration of the Environmental Leaders of the G-8 on Children's Environmental Health*. Miami, 1997.
8. *Lisbon Declaration*. First World Conference of Ministers Responsible for Youth, Lisbon, August 1998.
9. **Yach D, Ferguson BJ.** Can we stop children and adolescents from smoking? *Social Science & Medicine*, 1999, **48**: 757–758.
10. **Willis GB, Mowery PD.** *1999 youth tobacco survey questionnaire: report of cognitive testing results – final report*. Research Triangle Park, NC, Research Triangle Institute, 1999.
11. **Shah BV, Barnwell BG, Bieler GS.** *SUDAAN: software for the statistical analysis of correlated data. User's manual* (release 7.0). Research Triangle Park, NC, Research Triangle Institute, 1996.
12. **Joossens L.** *Improving public health through an international Framework Convention of Tobacco Control* (FCTC Technical Briefing Series, Paper No. 2). Geneva, World Health Organization, 1999 (unpublished document WHO/NCD/TFI/99.2).